

INVITATION FOR BIDS

IFB No. 22-001

PROJECT MANUAL

for

WILSON ROAD WATER TANK REHABILITATION

BID OPENING

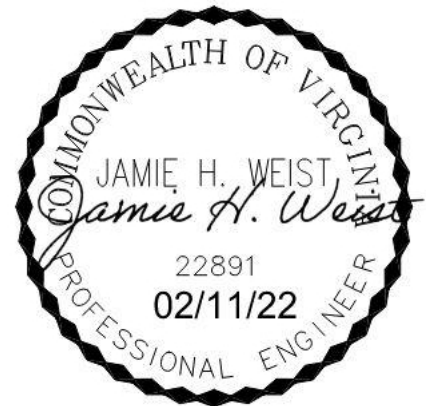
2:00 P.M. on Thursday, March 17, 2022



Department of Public Works and Utilities

Prepared by:

Kimley-Horn and Associates, Inc.
11818 Rock Landing Drive, Suite 100
Newport News, VA 23606



*** * * PLEASE NOTE * * ***

These BID DOCUMENTS refer to the Hampton Roads Planning District Commission's Regional Construction Standards, Sixth Edition, June 2016, as amended, which may be obtained from:

HAMPTON ROADS PLANNING DISTRICT COMMISSION
723 WOODLAKE DRIVE
CHESAPEAKE, VA 23320
PHONE (757) 420-8300
<http://www.hrpdcva.gov/>



INVITATION FOR BID (No. 22-001)

PROJECT: **Wilson Road Water Tank Rehabilitation**
LOCATION: **Wilson Road, Smithfield, VA (North of the intersection of Wilson Road and Evans Drive)**
DATE: **February 22, 2022**

The **Town of Smithfield** will receive sealed bids for the above titled project at **911 South Church Street, Smithfield, Virginia 23430** until **2:00 P.M.** local time on **Thursday, March 17, 2022**. The bids will be publicly opened and read aloud at the **Smithfield Center** located at **220 N Church Street, Smithfield, Virginia 23430** at **2:30 P.M.** local time on **Thursday, March 17, 2022**. Any bids received after the specified time and date will not be considered.

The project is generally described as rehabilitation of the existing 150,000-gallon elevated water storage tank on Wilson Road, modifications to existing valve vaults and replacement of the existing site fencing.

A bid package including detailed specifications may be obtained visiting the town website at www.smithfieldva.gov or eVA.virginia.gov. **A mandatory pre-bid conference/site visit will be held on Friday, March 4, 2022 at 10:00 A.M. at the project site (Wilson Road, Smithfield, Virginia).** All bidders are required to attend.

Questions concerning this Invitation for Bid shall be addressed to Jamie Weist, P.E., Project Manager Kimley-Horn and Associates, Inc at (757) 320-5636, or by email to jamie.weist@kimley-horn.com.

Bids must be submitted on the designated Bid Form, completed in ink or typed and signed by an authorized representative. Envelopes containing bids shall be in a sealed envelope marked **“Wilson Road Water Tank Rehabilitation IFB #22-001”** and a valid Virginia Contractor's License Number must be printed clearly on the sealed envelope. Failure to comply with all instructions may result in the bid being deemed non-responsive.

Withdrawal of bids due to error shall be subject to and in accordance with Section 2.2-4330 of the Code of Virginia and the Contract Documents.

The Owner reserves the right to waive minor non-substantive errors in the bid, to reject any/or all bids, to award any bid in whole or in part and award the bid considered to be in the best interest of the Owner. The Owner also reserves the right to negotiate with the lowest responsive, responsible Bidder should bid exceed available funds.

The Town of Smithfield does not discriminate in the solicitation or awarding of contract on the basis of race, religion, faith-based organizations, color, national origin, age, disability, or any other basis prohibited by State or Federal law.

REGIONAL CONSTRUCTION STANDARDS

Sixth Edition

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SECTION 101

DEFINITIONS OF TERMS

I. GENERAL DEFINITIONS

Wherever used in the Contract Documents, the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:

- 1.1 *Addenda* - Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bid Documents or the Contract Documents.
- 1.2 *Agreement* - The written agreement between the Owner and the Contractor covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
- 1.3 *Application for Payment* - The form provided in the Contract Documents which is to be used by the Contractor in requesting progress and final payments and which is to include such supporting documentation as is required by the Contract Documents.
- 1.4 *Bid* - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.5 *Bid Documents* - Documentation issued prior to the bid date, including documentation accompanying the Bid (Drawings, Project Specifications, HRPDC *Regional Construction Standards*, Addenda, and Special Provisions) and any Post-Bid documentation submitted prior to the Notice of Award.
- 1.6 *Bidder* - Any person, firm or corporation submitting a Bid for the Work.
- 1.7 *Bonds* - Performance and Payment Bonds furnished by the Contractor and the Contractor's surety in accordance with the Contract Documents.
- 1.8 *Bid Security* - Bid Bonds and other instruments of surety, furnished by the Contractor or the Contractor's surety in accordance with the Contract Documents.
- 1.9 *Change Order* - A written order to the Contractor authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents that authorizes an adjustment in the Contract Price and/or Contract Time, issued on or after the Effective Date of the Agreement.
- 1.10 *Completion Date* - The date specified in the Notice to Proceed for final completion of the Work.
- 1.11 *Contaminated Effluent* - Effluent from construction dewatering activities that is impacted with contaminants of concern and require special handling in accordance with applicable federal, state and local regulations.
- 1.12 *Contaminated Groundwater* - Groundwater that is impacted with contaminants of concern and require special handling in accordance with applicable federal, state and local regulations.
- 1.13 *Contract Documents* - The Agreement, including the Bid Documents, Notice of Award, Notice to

Proceed, Field Orders, Change Orders, and Modifications.

- 1.14 *Contract Price* - The total monies payable to the Contractor under the terms and conditions of the Agreement.
- 1.15 *Contract Time* - The number of calendar days stated in the Agreement for the completion of the Work. Calendar days shall be understood to be consecutive.
- 1.16 *Contractor* - The person, firm or corporation with whom the Owner has executed the Agreement.
- 1.17 *Day* - A calendar day of twenty-four hours measured from midnight to the next midnight. Calendar days shall be understood to be consecutive.
- 1.18 *Defective* - An adjective, which when modifying the word Work, refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to the Owner's acceptance.
- 1.19 *Drawings* - The plans that show the character and scope of the Work to be performed.
- 1.20 *Effective Date of the Agreement* - The date indicated in the introductory paragraph of the Agreement.
- 1.21 *Engineer* - The person, firm or corporation named as such in the Agreement. In the event the Owner should not require the services of the Engineer, then the powers, duties, and responsibilities conferred in the Contract Documents to the Engineer shall be construed to be those of the Owner.
- 1.22 *Field Order* - A verbal or written order effecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer or Owner to the Contractor during construction.
- 1.23 *Final Completion* - All work, including punch list items noted at the final inspection, is complete to the satisfaction of the Owner.
- 1.24 *Groundwater Effluent* - Groundwater that is pumped from the ground during construction.
- 1.25 *Laws and Regulations* - Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
- 1.26 *Liens* - Liens, charges, security interests or encumbrances upon real or personal property.
- 1.27 *May* - The term "may" is permissive.
- 1.28 *Notice* - All written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with the Contract Documents. Any written notice by either party to the Agreement shall be sufficiently given if delivered to or at the last known business address of the person, firm or corporation constituting the party to the Agreement, or to his, their, or its authorized agent, representative or officer, or when enclosed in a postage envelope addressed to such last known business address and deposited in a United States mailbox. Notice shall be deemed received within 3 business days of U.S. Mail Service postmark date.
- 1.29 *Notice to Proceed* - A written notice given by the Owner to the Contractor (with a copy to the Engineer, if appropriate) fixing the date on which the Contract Time will commence to run and on

which the Contractor shall start to perform its obligations under the Agreement.

- 1.30 *Owner* - The public body or authority, corporation, association, firm or person with whom the Contractor has entered into the Agreement and for whom the Work is to be provided.
- 1.31 *Owner's Representative* - The person, firm or corporation named by the Owner to act as the Owner's agent.
- 1.32 *Partial Utilization* - Use by the Owner of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
- 1.33 *Project* - The entire Work as described in the Contract Documents, including Work that is necessary and incidental to the furnishing of all materials, services, equipment, labor and supplies required to install, perform, and complete all items of Work in accordance with Contract Documents.
- 1.34 *Reference Standards* - Those bulletins, standards, rules, methods of analysis or tests, codes, and specifications of other agencies, engineering societies, or industrial associations referred to in the Contract Documents. These refer to the latest edition, including amendments in effect and published at the time the Project was advertised, unless specifically referred to by edition, volume, or date.
- 1.35 *Regional Construction Standards* - The construction standards, published by the Hampton Roads Planning District Commission (HRPDC) as amended from time to time.
- 1.36 *Responsible Bidder* - A person or firm who, in the sole opinion of the Owner, has the capability in all respects, to fully perform the contractual requirements as well as the moral and business integrity and reliability to assure good faith performance.
- 1.37 *Responsive Bidder* - A person or firm who has submitted a bid that conforms in all material respects to the Bid Documents.
- 1.38 *Resident Project Representative* - The authorized representative of the Engineer or Owner who is assigned to the Project or any part thereof.
- 1.39 *Roadway Prism* - All of the land or area within the right of way that needs to be cut, filled, graded, or otherwise disturbed to produce the design cross section, including, but not limited to, areas for curbs, ditches, sidewalks, paths, and slopes to match existing grade.
- 1.40 *Rock* - Any indurated material with a minimum compressive strength of 200 psi that requires drilling, wedging, blasting, or other methods of brute force for excavation.
- 1.41 *Shall* - The term "shall" is mandatory.
- 1.42 *Shop Drawings* - All drawings, diagrams, illustrations, schedules, specified design related submittals, and other data or information which are specifically prepared or assembled by or for the Contractor and submitted by the Contractor to illustrate some portion of the Work.
- 1.43 *Special Provisions* - Requirements in addition to or modification of the HRPDC *Regional Construction Standards*.
- 1.44 *Specifications* - Those portions of the Contract Documents or HRPDC *Regional Construction Standards* consisting of written technical descriptions of materials, equipment, construction systems,

standards and workmanship as applied to the Work and certain administrative details applicable thereto.

- 1.45 *Standard Details* - Those portions of the HRPDC *Regional Construction Standards* consisting of drawings, explanatory of another drawing, indicating in detail and at a larger scale, the design, location, composition and correlation of elements and materials.
- 1.46 *Subcontractor* - A person, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.
- 1.47 *Substantial Completion* - That date certified by the Owner when the construction of the Project or a specified part thereof is sufficiently completed in accordance with the Contract Documents, including completion of all tests, so that the Project or specified part can be utilized for the purpose for which it is intended.
- 1.48 *Successful Bidder* - The lowest, responsible and responsive Bidder to whom the Owner (on the basis of the Owner's evaluation as hereinafter provided) makes an award.
- 1.49 *Supplier* - Any person or organization that supplies materials or equipment for the Work, including that fabricated to a special design.
- 1.50 *Underground Facilities* - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.
- 1.51 *Work* - All labor, materials, equipment, transportation, supervision, or other facilities, duties or incidentals necessary for execution and completion of the Project in compliance with the Contract Documents.

End of Section

SECTION 102

BIDDING REQUIREMENTS AND CONDITIONS

I. INVITATION FOR BIDS

INVITATION FOR BID (No. 22-001)

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The Town of Smithfield does not discriminate in the solicitation or awarding of contract on the basis of race, religion, faith-based organizations, color, national origin, age, disability, or any other basis prohibited by State or Federal law.

II. INSTRUCTIONS TO BIDDERS

1. Bid Documents

- 1.1 Complete sets of Bid Documents shall be used in preparing Bids. Neither the Owner nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.
- 1.2 The Owner, in making copies of the Bid Documents available on the above terms does so only for the purpose of obtaining Bids on the Work and does not confer or license or grant permission for any other use.

The Special Provisions for this Project as set forth in Section 110 were prepared by Kimley Horn Engineers and are dated May 3, 2018. Additional Special Provisions for this Project appear as modifications to the HRPDC *Regional Construction Standards* by strike-throughs for deletions and bold type for additions in Sections 100 through 109.

The Hampton Roads Planning District Commission's *Regional Construction Standards, Sixth Edition*, December 2010, are hereby referenced and are part of the Bid Documents, except as may be modified by the Special Provisions of this Project or as may be shown by bold type for additions and strike-throughs for deletions. Copies of the *Regional Construction Standards* may be purchased at the offices of the HRPDC, 723 Woodlake Drive, Chesapeake, VA 23320 (Telephone 757-420-8300) or Executive Tower, Suite 1-C, 2101 Executive Drive, Hampton, VA 23666 (Telephone 757-262-0094). The latest edition of the *Regional Construction Standards* and Publication Updates may be downloaded at the HRPDC website http://www.hrpdcva.gov/Regional_Construction_Stnds/REGCONST_Home.asp.

Bidders must be aware that these Bid Documents incorporate a number of changes, which supplement, modify, or replace language and/or Standard Details found in the HRPDC *Regional Construction Standards*. Details shown on the Drawings replace corresponding Standard Details found in the *Regional Construction Standards*. Also, see Section 110 for additional references to Special Technical Provisions incorporated into this Project.

Bid Security in the amount of Five percent (5%) of the Bid shall be submitted with each Bid.

- 1.3 The contract documents for this Project, prepared by Kimley Horn and Associates, Inc. and dated February 2022 are defined as follows:

Wilson Road Water Tank Rehabilitation, Site Plans for Town of Smithfield, dated February 2022 along with associated HRPDC Technical Specifications, CONCRETE CURING, CONCRETE REPAIRS, and STEEL WATER STORAGE TANK PAINTING Technical Specifications, DAVIS BACON ACT and AMERICAN IRON and STEEL REQUIREMENTS and Inspection Report.

2. Examination of Contract Documents and Project Site

- 2.1 It is the responsibility of each Bidder before submitting a Bid:
 - A. To examine thoroughly the Bid Documents;

- B. To become familiar with and satisfy the Bidder as to the general, local and site conditions that may affect cost, progress, performance, or furnishing of the Work;
 - C. To study and carefully correlate the Bidder's knowledge and observations with the Bid Documents and such other related data; and,
 - D. To promptly notify the Owner of all conflicts, errors, ambiguities or discrepancies which the Bidder has discovered in or between the Bid Documents and such other related documents or field/site conditions.
- 2.2 Reference is made to Sections 104 III and 104 IV, for information relating to reports, explorations, underground facilities, and easements. On request, at the discretion of the Owner, the Owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. The Bidder shall fill all holes and clean up and restore the site to its former condition, including reseeding and/or resodding any disturbed areas upon completion of such explorations, investigations, tests and studies, and hold the Owner harmless from any damage to property or injury to persons resulting from or arising out of such exploration, investigation, tests, and studies. The Bidder shall obtain and comply with all local and state permitting requirements.

3. Interpretations and Addenda

- 3.1 No oral explanation in regard to the meaning of the Contract Documents will be made, and no oral instructions will be given before the award of the Work. Discrepancies, omissions or doubts as to the meaning of the Contract Documents shall be communicated in writing to the Owner for interpretation. Bidders should act promptly and allow sufficient time for a reply to reach them before the submission of their Bids. Any interpretation made will be in the form of an addendum to the Contract Documents, which will be forwarded to all known Bidders, and its receipt shall be acknowledged on the Bid form. **All questions must be received no later than 7 days prior to the date for opening of Bids.**
- 3.2 Addenda may also be issued to modify the Contract Documents.
- 3.3 Subsurface Exploration – Subsurface boring data may be included in the Appendix. The Bidder shall be responsible for conducting any further subsurface investigations that he deems necessary.

Geotechnical exploration and analysis information included, in whole or in part, in these Bid Documents gives the physical data on subsurface conditions as obtained for the Owner only, and in no event is this information to be considered as part of the Contract. It is expressly understood that neither the Owner nor the Engineer will be responsible for any interpretation or conclusions drawn therefrom by the Contractor.

Bidders are cautioned that the subsurface boring data was used for general design purposes only and may be inadequate for the purposes of bidding the Contract items. It is strongly recommended that the Contractor perform his own subsurface investigation(s) to the extent necessary to satisfy himself as to the subsurface conditions.

4. Bid Security

- 4.1 Each bid shall be accompanied by a Bidder's bond issued by a company authorized and licensed to transact business as surety in the Commonwealth of Virginia, a certified check, or cash escrow, in an amount equal to not less than five (5) percent of the total amount of the bid, made payable to the

Town of Smithfield, Virginia. Upon approval of the Owner's attorney, in accordance with Section 2.2-4338, Code of Virginia, 1950, as amended, a Bidder may furnish a personal bond, property bond, or bank or savings and loan association's letter of credit on certain designated funds for the amount required for the Bid Security. The Bid Security shall be accompanied by a certified copy of the power of attorney for the surety attorney-in-fact. Said bid security shall be left with the Owner, subject to the conditions specified herein, as a guarantee of good faith on the part of the Bidder that if the bid is accepted, the Bidder shall execute the contract. If a certified check is offered as guarantee, it shall be made payable to The Town of Smithfield.

- 4.2 The Bid Security shall be returned to all except the three (3) lowest Bidders within ten (10) days after the date of Bid opening. The Bid Security will be returned to the three (3) lowest Bidders within five (5) days after the execution of an Agreement and Performance and Payment Bonds and Certificates of Insurance have been approved by the Owner. None of the three (3) lowest Bids shall be deemed rejected, notwithstanding acceptance of one of the Bids, until the Agreement has been executed by both the Owner and the Successful Bidder.

5. Liquidated Damages

Should the Contractor fail to Substantially Complete the work on or before the **120 day** construction phase established for Substantial Completion Date, the Contractor shall pay the Owner the sum of **\$500.00 for each consecutive calendar day** that the terms of the Contract remain unfulfilled.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Owner of any of his rights under the Contract. Liquidated damages will be calculated and assessed based on provisions defined in the General Conditions and the date upon which the Architect/Engineer and Owner certify that all items on the Substantial Completion "Punch List" are complete. The sums mentioned above shall represent the actual measure of liquidated damages which the Owner will sustain per diem by failure of the undersigned to complete the Work at the times stipulated. The sum is in no way to be considered a penalty.

6. Quantities and Unit Prices

- 6.1 The Owner reserves the right to increase or decrease the amount of any class or portion of the Work. No such change in the Work shall be considered as a waiver of any condition of the Agreement nor shall such change invalidate any of the provisions thereof. Payment will be made at the unit or lump sum prices under the Agreement only for the Work actually performed or materials furnished and accepted.
- 6.2 Bidders shall include in their Bid prices the entire cost of each item set forth in the Bid, and it is understood and agreed that there is included in each lump sum or unit price bid item the entire cost necessary or incidental to the completion of that portion of the Work, unless such incidental Work is expressly included in other lump sum or unit price bid items.

7. General Equipment or Material Specification.

When the Bid Documents specify one or more manufacturer's brand names or makes of materials, devices or equipment as indicating a quality, style, appearance or performance, with the statement "or equal," the Bidder shall base the Bid on either one of the specified brands or an alternate brand which the Bidder intends to substitute. Use of an alternate shall not be permitted unless it has been found to be equal or better by the Owner and at no additional cost to the Owner. The Owner will not

prequalify any substitute materials or equipment submitted by the Bidders. Only substitute items submitted by the successful Bidder after the date of the Contract Award will be considered by the Owner or his representative.

- 7.1 The burden of proof as to the comparative quality and suitability of alternative equipment, articles or materials shall be upon the Bidder. The Bidder shall furnish at its own expense, such information relating thereto as may be required by the Owner. The Owner shall be the sole judge as to the comparative quality and suitability of alternative equipment, articles or materials and the Owner's decisions shall be final. Any other brand, make or material, device or equipment which, in the opinion of the Owner is recognized to be the equal of that specified, considering quality, workmanship and economy of operation and is suitable for the purpose intended, shall be accepted. In the event of any adverse decision by the Owner, no claim of any sort shall be made or allowed against the Engineer or Owner. Samples, if requested by the Bidder, may be returned at the Bidder's expense.
- 7.2 If in the sole discretion of the Owner an item proposed by the Contractor does not qualify as an "or-equal" item it may be considered as a proposed substitute item. The Contractor shall furnish the Owner any such information as the Owner may request to evaluate the substitute item to include estimates of costs or credits, redesign, claims or schedule impacts, warranty or maintenance issues or payment of any license or royalty that could directly or indirectly result from acceptance of the substitute. Any cost or time impacts to the project schedule caused by the Contractor's submission of a substitute shall be borne by the Contractor. Any costs incurred by the Owner or by the Owner's Engineer in reviewing the suitability of the substitute item shall be borne by the Contractor. The Owner may refuse to accept a substitute unless an acceptable adjustment in the Contract Price is offered by the contractor.

8. Proprietary Material and Equipment Specification.

Where any item of equipment or material is specified by proprietary name, trade name, catalog reference, or name of one or more manufacturers, without the addition of such expressions as "or equal," it is to be understood that those items are so specified for reasons of standardization in maintenance and operation, or for reasons of obtaining desirable features best suited to the requirements of the Specifications. This specific equipment shall form the basis of the Bid and be furnished under the Agreement. Where two or more items of equipment or material are named, the Contractor has the option to use either.

9. Additive/Alternate Bids

9.1 Additive Bids

Additive bid items are those in addition to the base Bid items, unless otherwise noted on the Bid Form. Bidders shall submit additive Bids on all items as shown on the Bid form. Award shall be based on the lowest responsive and responsible Bid for base Bid plus all additive bid items listed and in accordance with any criteria in the Special Provisions.

9.2 Alternate Bids

Alternate bid items are those where more than one type of improvement may be considered for a portion or all of the Work due to the character of the improvement and uncertainties which may be encountered during construction. If alternate Bids are requested for a portion of or all of the Work, Bidders shall submit alternate Bids for all alternate(s) the Bidder or its Subcontractor is qualified to

perform. Award shall be based on the lowest responsive and responsible Bid for the base Bid plus the amount added or deleted for the alternate bid items selected by the Owner and in accordance with any criteria in the Special Provisions. The alternates selected shall be at the sole discretion and in the best interests of the Owner.

10. Submission of Bids

- 10.1 Bids shall be submitted at the time and place indicated in the Invitation for Bids and shall be sealed, marked with the Project title and name and address of the Bidder, and accompanied by the bid guarantee and other required documents. The Bid may not be changed by markings on the envelope. Only the amounts indicated on the Bid form will be considered in determining the final Bid amount.

It will be the responsibility of Bidder to see that its Bid is submitted to the Owner by the specified time and date. There will be no exceptions. Date of postmark will not be considered. Phone or telegraphic bids (including FAX) will not be accepted.

- 10.2 All blanks on the Bid form shall be completed in ink.

- 10.3 Bids by corporations shall be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

- 10.4 Bids by unincorporated organizations shall be executed in the organization's name and signed by an individual having authority to enter into a contract on behalf of such organization, whose title shall appear under the signature and the official address of the organization shall be shown below the signature. For example, if such organization is a Limited Liability Company, the Bid shall be signed by a member or by its manager, as authorized in its operating agreement; in the case of a manager-led Limited Liability Company, the Bid shall be signed by its manager; or if such organization is a Limited Partnership, the Bid shall be signed by a general partner.

- 10.4.1 All names shall be typed or printed in ink below the signature. All names shall be the legal name of the corporation, unincorporated organization and/or individual.

- 10.4.2 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid form).

- 10.4.3 The address, telephone number, e-mail address and fax number for communications regarding the Bid shall be provided.

- 10.4.4 It is understood and agreed that, in the event an Agreement is executed for the supplies, equipment or services included in the Bid, no indication of such sales or services to the Owner shall be used in any

- 10.4.5 When a license is required, the Bidder shall include in its Bid over the Bidder's signature the following notation: "VIRGINIA LICENSED CONTRACTOR NO. _____" (Ref. Title 2.2, Chapter 43, and Title 54.1, Chapter 11, Code of Virginia).

- 10.4.6 When a license is not so required and a person who is not the holder of a License enters a Bid, such person shall include in its Bid over the Bidder's signature the following notation: "LICENSING NOT REQUIRED UNDER VIRGINIA STATE CODE."

- 10.5 The Bidder shall complete and submit the Debarment Certification form. A copy of the form is included in Section 102, VI at the end of this Section.
- 10.6 The Bidder shall complete and submit the Certificate of Compliance with Immigration Laws and Regulations form. A copy of the form is included in Section 102, VII in this section.
- 10.7 The Bidder shall complete and submit the Non Collusion Affidavit form. A copy of the form is included in Section 102, III.K in this section

11. Receipt and Opening of Bids

- 11.1 Bids will be opened publicly at the time and place and under the conditions stated in the Invitation for Bids. The Owner's Representative whose duty it is to open Bids will decide when the specified time has arrived. The official time and date used in the receipt of the Bids is that time and date stamped by the Owner when the Bid is submitted. Date/time stamps marked after the designated time and date of receipt will not be considered. No responsibility will be attached to any such person for the premature opening of a Bid not properly addressed and identified. It is the responsibility of the Bidder to assure that the Bid is delivered to the designated place of receipt prior to the time set for the receipt of Bids.
- 11.2 Bids will be opened and read aloud publicly.

12. Bids to Remain Subject to Acceptance

- 12.1 All Bids shall remain subject to acceptance for 90 Days after the day of the Bid opening, but the Owner may, in its sole discretion, release any Bid and return the Bid Security prior to that date, or extend the acceptance period an additional 90 days with the consent of the apparent low Bidder and surety.

13. Withdrawal of Bids

- 13.1 Withdrawal of Bids filed with the Owner may be made only by a representative of the firm submitting the Bid, who shall appear in person prior to the deadline designated in the advertisement for receipt of Bids. Such representative shall furnish satisfactory identification and proof that they are authorized to withdraw the Bid. Telephone, e-mail, or facsimile notices will not be considered. Additions and/or deletions marked on the outside of the Bid envelope will not be considered.
- 13.2 In accordance with Section 2.2-4330(A)(i) of the Code of Virginia, as amended, if the Bid price was substantially lower than the other Bids solely to a mistake therein, provided the Bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor, or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents, and materials used in the preparation of the Bid sought to be withdrawn and provided further the Bidder shall give notice in writing of his claim of right to withdraw within two (2) business days after the Bid opening, then the Bid may be withdrawn. The Bidder shall, within the following two (2) business days provide the subjective data required in this section to satisfy the Owner's representative that the grounds for such withdrawal do exist.
- 13.3 Should the Bidder refuse to enter into the Agreement after notification of award, the Bid Security shall be forfeited.

- 13.4 No Bid may be withdrawn under this section when the result would be the awarding of the Agreement on another Bid to the same Bidder or to another Bidder in which the ownership of the withdrawing Bidder is more than five percent.
- 13.5 If a Bid is withdrawn under the authority of this section, the remaining Bids shall be evaluated to determine the lowest responsive and responsible Bidder.
- 13.6 No Bidder who is permitted to withdraw a Bid shall, for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom awarded, or otherwise benefit, directly or indirectly, from the performance of the Project for which the withdrawn Bid was submitted.
- 13.7 If withdrawal of any Bid is denied, the Bidder shall be notified in writing stating the reasons for this decision. Any Bidder who desires to appeal a decision denying withdrawal of Bid shall, as sole remedy, institute legal action provided by Section 2.2-4358 and Section 2.2-4364(B), Code of Virginia, 1950, as amended.

14. Evaluation of Bids

- 14.1 In evaluating Bids, the Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, unit and lump sum prices, and additive/alternate bid items if requested in the Bid form.
- 14.2 The Owner may consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the Work for which the identity of Subcontractors and other persons and organizations shall be submitted as specified in the Bid Documents.
- 14.3 The Owner may conduct such investigations as deemed necessary to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the Work in accordance with the Bid Documents to the Owner's satisfaction within the prescribed time.
- 14.4 Bids will be based upon the estimated quantities shown in the Bid form. Bids will be compared on the basis of a total computed price; arrived at by taking the sum of the estimated quantities of each Bid Item, multiplied by the corresponding unit price bid, and any lump sum Bids on the individual items. Discrepancies between the multiplication of units of work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of words. The right to reject any or all Bids or to accept any Bid considered of advantage to the Owner is reserved.
- 14.5 Unless all Bids are canceled or rejected, the Owner reserves the right granted by Section 2.2-4318 of the Code of Virginia as amended, to negotiate with the lowest responsible, responsive Bidder to obtain a Contract Price within the funds budgeted for the construction project. Negotiations with the lowest Bidder may include both modification of the Contract Price and the Scope of Work/Specifications to be performed. The Owner shall initiate such negotiations by Written Notice to the lowest responsible, responsive Bidder that its Bid exceeds the available funds and that the Owner wishes to negotiate a lower Contract Price. The Owner and the lowest responsive, responsible Bidder shall agree to the times, places, and manner of negotiations.

- 14.6 The acceptance of a Bid will be a notice in writing, signed by the Owner, and no other act shall constitute the acceptance of a Bid.
- 14.7 The Owner reserves the right to waive minor informalities as defined in Virginia Code Section 2.2-4301 in the Bid, to reject any/or all Bids, to award any Bid in whole or in part, and to award the Bid considered to be in the best interest of the Owner.
- 14.8 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder had an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

15. Qualifications of Bidders and Subcontractors

- 15.1 The Contractor's Questionnaire is included in the Bid Documents and, if requested by the Owner, shall be submitted upon request within 72 hours. This information will assist the Owner in investigations and determination of the Contractor's qualifications to perform the Work.
- 15.2 To demonstrate their qualification to perform the Work, each Bidder shall be prepared to submit further written satisfactory evidence that the Bidder has sufficient experience, necessary capital, materials, machinery and skilled workers to complete the Work. If financial statements are required they shall be of such date as the Owner shall determine and shall be prepared on forms acceptable to the Owner. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the Work. The Owner's decision or judgment on these matters shall be final, conclusive and binding.
- 15.3 The apparent low Bidder shall, submit to the Owner a list of all Subcontractors who will be performing Work on the Agreement at such time and date directed by the Owner. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of experience and qualification for each such Subcontractor, person and organization. If the Owner, after due investigation, has reasonable objection to any proposed Subcontractor, other person or organization, the Owner may, before giving the Notice of Award, request the apparent low Bidder to submit an acceptable substitute without an increase in Bid price. If the apparent low Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. For any Subcontractors, other person or organization so listed and to whom Owner does not make written objection prior to the giving of the Notice of Award, it will be deemed the Owner has no objection.
- 15.4 By submitting their Bid, Bidders certify that they are not now debarred by the Federal Government or by the Commonwealth of Virginia or by any other state, or by any town, city, or county, from submitting Bids on contracts for construction covered by this solicitation, nor are they an agent of any person or entity that is now so debarred.
- 15.5 If the Bidder is organized as a stock or nonstock corporation, a limited liability company, a business trust, or a limited partnership, or is registered as a registered limited liability partnership, the Bidder must be authorized to transact business in the Commonwealth as a domestic or foreign entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law. The Bidder shall include the identification number issued by the State Corporation Commission on the Bid form or describe why the Bidder is not required to be so authorized. Any Bidder failing to do so shall not be awarded the Contract unless the Owner issues a waiver of this requirement and

administrative policies and procedures are established by the locality. If the Bidder allows its existence to lapse, or its certificate of authority or registration to transact business in the Commonwealth of Virginia to expire, or be revoked or cancelled, such will be deemed as an act of default enabling the Owner to all remedies for default, including but not limited to revocation of this Agreement.

16. Sham or Collusive Bids

- 16.1 The Bids of any Bidder or Bidders who engage in collusive bidding shall be rejected. Any Bidder who submits more than one Bid in such a manner as to make it appear that the Bids submitted are on a competitive basis from different parties shall be considered a collusive Bidder.
- 16.2 The provisions contained in Sections 2.2-4367 through 2.2-4377, Code of Virginia, as amended, shall be applicable to all contracts solicited or entered into by Owner. By submitting their Bids, all Bidders certify that their Bids are made without collusion or fraud, and that they have not offered or received any kickbacks or inducements from any other Bidder, Supplier, manufacturer or subcontractor in connection with their Bid, and they have not conferred with any public employee having official responsibility for this procurement transaction, any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

17. Time of Essence

- 17.1 TIME IS THE ESSENCE OF THIS CONTRACT. As the provisions hereof relating to the time for performance and completion of the Work are for the purpose of enabling the Owner to proceed with the construction of public improvements in accordance with pre-planned programs, such provisions are of the essence.

18. Immigration Reform and Control Act of 1986

- 18.1 By submitting their proposal, Bidders/offerors certify that they do not, and will not during the performance of this contract, employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986.
- 18.2 All Bidders must submit a completed Certification of Compliance with Immigration Laws and Regulations form (See Section 102.VII) with their Bid.

19. Notice of Required Disability Legislation Compliance

- 19.1 The Owner is required to comply with State and Federal disability legislation:
- 19.2 The Rehabilitation Act of 1973, Section 504, the Americans with Disabilities Act (ADA) of 1990, Title II and the Virginians with Disabilities Act of 1990. Specifically, the Owner may not, through its contractual and/or financial arrangements, directly or indirectly avoid compliance with Title II or the ADA, Public Law 101-336, which prohibits discrimination by public entities on the basis of disability. Subtitle A protects qualified individuals with disability from discrimination on the basis of disability in the services, programs, or activities of all State and local governments. It extends the prohibition of discrimination in federally assisted programs established by the Rehabilitation Act of 1973, Section 504 to all activities of State and local governments, including those that do not receive Federal financial assistance, and incorporates specific prohibitions of discrimination on the basis of

disability in Titles I, III, and V of the ADA. The Virginians with Disabilities Act of 1990 follows the Rehabilitation Act of 1973, Section 504.

BID FORM

To: Michael Stallings, Town Manager

Submitted By: _____

Date: Thursday, March 17, 2022

Having carefully examined the drawings and specifications prepared by Kimley-Horn and Associates, Inc. and entitled Wilson Road Water Tank Rehabilitation, Site Plans for Town of Smithfield, dated February 2022, as well as the premises and conditions affecting the work, the undersigned proposes to furnish all materials, labor, equipment and services, including applicable taxes, for a lump sum consideration of:

LUMP SUM BASE BID

_____ Dollars

(\$ _____) **TOTAL LUMP SUM BASE BID**

ADDENDUM # and DATE

(List all addenda with dates, if any issued. If no addenda is issued, write the word "none.")

TIME OF COMPLETION

Work shall commence immediately upon contract signing or upon Notice To Proceed. Owner anticipates Award of Contract/Notice to Proceed by March 31, 2022. All work shall be Substantially Complete and available for occupancy/use within **120** days of contract signing or Notice to Proceed. Liquidated Damages in the amount of \$500 per calendar day will be assessed for every day the project remains incomplete beyond the 120-day substantial completion date.

BID SECURITY

If notified of the acceptance of this bid within sixty (60) calendar days after the date fixed for the opening of the bids, the undersigned agrees to execute and deliver to the Owner the Contract and Contractor's Bonds within ten (10) calendar days from the date of notification and, to faithfully and properly complete the work with the best interest of the Owner, the safety of the public and in accordance with first class workmanship.

The undersigned agrees the Owner may retain five percent (5%) of the contract amount.

Attached hereto is a cashier's check/certified check in the amount of _____ or Bid Bond (AIA Document A310, Bid Bond noted below, or from Bid Bond Surety Company authorized to do business in the State of Virginia and acceptable to the Authority), none of which shall be less than five percent (5%) of the principal's bid, made payable to the Owner.

The Undersigned agrees, if awarded the Contract, to comply with all provisions regarding commencement, performance, completion and acceptance of the work described in the above mentioned specifications and as stipulated in his proposal and the construction contract. In case of failure on his part to execute the said contract and bond and commence work thereon, the check or bid bond shall be paid as liquidated damages for such failure; otherwise, the check or bid bond accompanying this proposal shall be returned to the Undersigned.

It is agreed that the Undersigned has complied with and/or will comply with all requirements concerning licensing and with all other Local, State and National Laws and that no legal requirement has been or will be violated in making or accepting this proposal, in awarding the contract to him and/or in the prosecution of the work required thereunder.

The Undersigned declares that the person or persons signing this proposal is/are fully authorized to sign the proposal on behalf of the firm listed and to fully bind the firm listed to all the conditions and provisions thereof. It is agreed that no person or persons or company other than the firm listed below or as otherwise indicated hereinafter has any interest whatsoever in this proposal of the Contract that may be entered into as a result thereof and that in all respects the proposal is legal and fair, submitted in good faith without collusion or fraud.

Respectfully submitted this **March 17, 2022.**

(Name of Firm)

(Mailing Address of Firm)

(City/State/Zip Code of Firm)

()

(Phone Number)

By _____

Printed Name

Signature

General Contractor Number: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto _____ as OWNER in the penal sum of _____ (Five Percent) for the payment of which, well and truly made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20____.

The Condition of the above obligation is such that whereas the Principal has submitted to the OWNER a certain BID, attached hereto and hereby made a part hereof to enter into an Agreement in writing, for the _____

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver an Agreement in the Form of Agreement attachment hereto (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said Agreement, and for the payment of all persons performing labor or furnishing materials in connection therewith, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year set forth above.

Principal

Surety

By: _____
Attorney-in-Fact

IMPORTANT - Surety companies executing BONDS shall appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the Commonwealth of Virginia.

VI. CERTIFICATION REGARDING DEBARMENT (To be submitted with Bid)

This is to certify that this person/firm/corporation is not now debarred by the Federal Government or by the Commonwealth of Virginia or by any other state, or by any town, city, or county, from submitting Bids on contracts for construction covered by this solicitation, nor are they an agent of any person or entity that is now so debarred.

Name of Official

Title

Firm or Corporation

Date

VII. CERTIFICATION OF COMPLIANCE WITH IMMIGRATION LAWS AND REGULATIONS

To be submitted prior to award of contract.

Section 2.2-4311.1 of the Code of Virginia every public body to provide in every written contract that the Contractor does not, and shall not, during the performance of the contract knowingly employ an unauthorized alien in violation of federal immigration laws and regulations. These laws include the Federal Immigration Reform and Control Act, which makes it unlawful for a person or other entity to hire, recruit or refer for a fee for employment in the United States, an alien knowing the alien is unauthorized, and Section 40.1-11.1 of the Code of Virginia, which makes it unlawful for any employer to knowingly employ an alien who cannot provide documents indicating that he or she is legally eligible for employment in the United States. The state law, in particular, places an affirmative duty on employers to ensure that aliens have proof of eligibility for employment.

Accordingly this certification shall be completed and attached to all contracts and agreements for goods and services made by the City/County of _____ or any of its boards and commissions. Failure to attach a completed certification shall render the contract or agreement void.

Type or print legibly when completing this form.

Legal Name of Contractor: (Note: This is your name as reported to the IRS. This should match your Social Security card or Federal ID Number.)

Type of Business Entity:

Sole proprietorship (Provide full name and address of owner):

Limited Partnership (Provide full name and address of all partners):

General Partnership (Provide full name and address of all partners):

Limited Liability Company (Provide full name and address of all managing members):

Corporation (Provide full name and address of all officers):

Doing Business As:

If Applicable (Note: This is the name that appears on your invoices but is not used as your reporting name.)

Name and Position of Person Completing this Certificate:

Physical Business Address:

Primary Correspondence Address (If different from physical address):

Number of Employees:

Are all Employees Who Work in the United States Eligible for Employment in the United States?

Under penalties of perjury, I declare on behalf of the Contractor listed above that to the best of my knowledge and based upon reasonable inquiry, each and every one of the Contractor's employees who work in the United States are eligible for employment in the United States as required by the Federal Immigration Reform and Control Act of 1986 and Section 40.1-11.1 of the Code of Virginia. I further declare on behalf of the Contractor that it shall use due care and diligence to ensure that all employees hired in the future who will work in the United States will be eligible for employment in the United States. I affirm that the information provided herein is true, correct, and complete.

Sworn this _____ day of _____, 20____ on behalf of _____ as evidenced by the following signature and seal:

Name of Contractor: _____

Printed Name of Signatory: _____

Signature: _____

Date: _____

COMMONWEALTH OF VIRGINIA:

CITY/COUNTY OF _____, to-wit:

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____.

Notary Public

Registration No.: _____

My commission expires: _____

VIII. SAFETY CERTIFICATION FORM (To be submitted prior to award of Contract)

Project Title: _____

Contract No.: _____

Name of Firm: _____

Project Safety Responsibility (Name): _____

Telephone Number: _____

Cell Number: _____

Email: _____

Emergency Contact (Name): _____

Contract No.: _____

Telephone Number: _____

Cell Number: _____

Email: _____

The undersigned hereby attests that the project has been carefully evaluated for the safety risks it presents and all safety procedures required based on these risks by Virginia Occupational Safety & Health, referenced in the Bid document, will be implemented. Virginia Occupational Safety & Health and all other applicable Federal, State and local laws referenced in the Bid document, will be implemented. All workers on this project will be properly trained on the use of safety equipment and safe work practices.

By: _____

(Type Name and Title)

(Signature)

(Date)

End of Section

SECTION 103

AWARD AND EXECUTION OF AGREEMENT

I. AWARD AND EXECUTION OF AGREEMENT

1. Notice of Award.

- 1.1 A Notice of Award will be issued by the Owner, or the Bids rejected as soon as reasonably possible, but no later than 90 Days after the date of the opening of Bids. The Owner may, in its sole discretion, release any Bid and return the Bid Security prior to that date, or extend the acceptance period an additional 90 days with the consent of the apparent low bidder and surety.
- 1.2 The Owner reserves the right to waive any minor informalities, to reject any and all Bids in whole or in part, and may advertise for new Bids if, in its judgment, the best interests of the Owner will be served.
- 1.3 At the time of the issuance of the Notice of Award, the Owner shall publicly post an announcement of the award on/at the **Dept. of Public Works and Utilities** located at **310 Institute Street, Smithfield, Virginia 23430**

2. Signing of Agreement.

- 2.1 When the Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by 4 original copies of the Agreement, with all other written Contract Documents attached. Within 10 Days thereafter the Contractor shall sign and deliver all the original copies of the Agreement and attached documents to the Owner with the required Bid Security, Certificate of Insurance and Safety Certification Form. Within 30 Days thereafter the Owner shall deliver one fully signed copy to the Contractor.
- 2.2 If the Successful Bidder fails to execute the Agreement within the time specified, the amount of Bid Security shall be paid to the Owner. In such case the Owner, at its discretion, may award the Work to the second Successful Bidder, or reject all Bids.

3. Performance and Payment Bonds.

- 3.1 The Successful Bidder shall execute and provide to the Owner, within 10 Days following Notice of Award, Performance and Payment Bonds with surety in an amount equal to 100% of the accepted Bid. The sureties of all Bonds shall be of such surety company or companies as are approved by the Owner and are authorized to transact business in the Commonwealth of Virginia. If the execution is by an attorney-in-fact, a power of attorney evidencing the authority of such attorney shall be attached to the Bond. Such power of attorney shall bear the same date as the Bond to which it is attached.
- 3.2 All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws and Regulations and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U. S. Treasury Department.
- 3.3 Performance and Payment Bonds shall remain in full force during the warranty period defined in

4. Contractor's Insurance

- 4.1 The Contractor shall provide and keep in full force and affect during the performance of the Work the kinds and amounts of insurance specified in Section 4.2 below and shall comply with all other provisions of this Section. Such insurance shall be provided and kept in full force by insurance companies licensed to do business in the Commonwealth of Virginia (to the extent that the Commonwealth licenses each of the specific lines of insurance required herein), and regulated by the Virginia Bureau of Insurance. To the extent that the Commonwealth does not license a specific line of insurance required herein, the company providing that type of coverage shall be authorized to do business in the Commonwealth and regulated by the Virginia Bureau of Insurance. All premiums and other costs of such insurance shall be paid by the Contractor. It will be assumed that the consideration paid or to be paid to the Contractor for the performance of the Work includes the premiums and other such costs of such insurance, and the Owner shall not be responsible therefore. Prior to the Owner's execution of the Contract, the Contractor shall furnish a certificate(s) of insurance evidencing the coverages required below in Section 4.2. The Contractor shall not be required to furnish the Owner with copies of the insurance contracts required by this Section unless requested from time to time by the Owner

Contractor shall also provide Owner with a copy of an endorsement to all insurance contracts evidencing the required coverage. Contractor shall also provide Owner with not less than 30 days' notice of the termination or cancellation of any insurance contract.

4.2 Insurance Requirements:

- A. The Contractor shall purchase and maintain during the life of the Contract such comprehensive general liability insurance including product and completed operations liability insurance as will provide protection from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether such performance is by Contractor, or by Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and shall otherwise bear responsibility therefore. The Contractor further agrees that all limits will be made available which are excess of the amounts below:

1) **Workers Compensation and Employers Liability**

Coverage A - Statutory

Coverage B - \$100,000/\$100,000/\$500,000

A broad form of all states endorsement shall be attached.

2) **Commercial Auto Liability Including Hired and Non-Owned Car Liability Coverage**

Limit of Liability - \$1,000,000 Per Occurrence

The Contractor shall purchase and maintain during the life of this Agreement such commercial automobile liability insurance including employer's non-ownership liability and hired car liability insurance to protect Contractor and any Subcontractors performing Work

covered by this Agreement from claims for damages, whether such operations be by him or any Subcontractor, or by anyone directly or indirectly employed by either of them.

3) Commercial General Liability Including Contractual and Completed Operations.

Limit of Liability - \$1,000,000 Per Occurrence

4) Umbrella Liability Including Employers Liability, Commercial Auto Liability and Commercial General Liability.

Limit of Liability - \$5,000,000 Per Occurrence

\$5,000,000 Aggregate

5) Builder's Risk Insurance.

The Contractor shall purchase and maintain builder's risk insurance for all new construction. The Contractor shall provide builder's risk coverage on the full insurable value of the Work.

- B. The Contractor shall be responsible for securing the Work site and shall assume all risk for vandalism or other damage that may occur, to project components, during construction.
- C. The Owner shall be named as an additional insured on the Commercial General Liability per ISO 2010 or equivalent on a primary basis unless the policy language includes the Owner as an additional insured. The Contractor shall obtain a waiver of subrogation from its insurers on Worker's Compensation and All Risk Insurance policies. This requirement may be satisfied by obtaining appropriate endorsements to any master or blanket policy of insurance maintained. Owner's Commercial General Liability shall not contribute in any loss payment insured under the Contractor's Commercial General Liability policy
- D. Contingent liability and property damage insurance to protect the Owner (or his employees and agents, including the Engineer) shall be provided by endorsements to general liability or property damage policies. All aforesaid policies shall be endorsed to provide that the insurance company shall notify the Owner if policies are to be terminated or altered during the life of the contract.
- E. The General Liability insurance shall carry a contractual liability endorsement covering the hold harmless agreements contained in the Owner standard contract and the certificates filed with the Owner shall show that the contractual liability coverage has been obtained.
- F. Insurance coverage for personal injury and property damage, including insurance on vehicles and equipment, shall be in the same company.
- G. The Contractor shall also be required to submit to the Owner evidence of insurance coverage or self-insurance for all claims arising under the Worker's Compensation Laws of the State of Virginia.

- H. To the fullest extent permitted by Law or Regulation, the Contractor shall indemnify and hold harmless the Owner, and the Owner's officers, agents, employees, and other representatives, against any liability, loss or expense (including the loss of use of the Project), due to any act or omission of Contractor or any of their Subcontractors or of any of their respective employees in connection with the Work of the Contractor hereunder, except to the extent such liability, loss, or expense is caused by or results solely from the negligence of the Owner, its agents, or employees.
- I. The Contractor shall submit proof that the Owner will receive thirty (30) day written notice prior to cancellation of the commercial general liability, commercial auto liability, umbrella liability, workers' compensation, and builder's risk insurance policies. Where cancellation is due to non-payment of premium, the Owner will accept written notice that is given at least ten (10) days prior to cancellation of the insurance policy.

5. Safety Certification Form

5.1 The Contractor shall submit a Safety Certification Form that includes the following information:

- A. The name and phone number of the individual who will be responsible to ensuring all applicable safety procedures are followed and personal protective equipment is used on the project site.
- B. The name and phone number of the individual who should be contacted in the event of an emergency.
- C. The Safety Certification Form is included in the Section 102.VIII.

II. NOTICE OF AWARD

TO: _____

PROJECT TITLE: _____

The Owner has considered the Bid submitted by you for the above described Work in response to its Invitation for Bids dated _____, 20____, and Instructions to Bidders.

You are hereby notified that your Bid has been accepted for the Work in the amount of \$_____.

You are required by the terms of the Bid Documents to fully execute and return _____ copies of the Agreement along with the required Contractor's Performance Bond, Payment Bond, and Certificates of Insurance within _____ Days from the date of this Notice of Award.

If you fail to execute the Agreement and to furnish said Bonds and Certificate of Insurance within _____ Days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as a forfeiture of your Bid Security. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner. The notice of award shall not be construed as notice to proceed.

Dated this _____ day of _____, 20____.

OWNER

Owner
By: _____
Name
Title: _____

CONTRACTOR

Contractor
By: _____
Name
Title: _____

III. AGREEMENT

TOWN OF SMITHFIELD: Bid Package **IFB No. 22-001 Wilson Road Water Tank Rehabilitation, Smithfield, Virginia**

THIS AGREEMENT, made and entered into this _____ day _____ of _____ by and between the Town of Smithfield, a Virginia municipal corporation, hereinafter called the Owner, and hereinafter called the Contractor, whose address is _____

WITNESSETH:

WHEREAS, the Owner intends to have the Wilson Road Water Tank, rehabilitated at Wilson Road, Smithfield, Virginia.

WHEREAS, the Contractor agrees to perform the work for the sum herein stated.

NOW THEREFORE, the Owner and the Contractor for the consideration hereinafter provide agree as follows:

ARTICLE 1. SCOPE OF WORK

The work to be performed shall be in accordance with Contract Documents prepared by Kimley-Horn and Associates, Inc. entitled Wilson Road Water Tank Rehabilitation Site Plans for Town of Smithfield, dated February 2022. The Contractor agrees to furnish all permits, labor, materials and equipment to complete the work as required in the Contract Documents, which are hereby made a part of this contract by reference. It is understood and agreed by the parties hereto that all work shall be performed as required in the Contract Documents and shall be subject to inspection and approval of the Owner or its authorized representative. The relationship of the Contractor to the Owner hereunder is that of an independent Contractor. The Contract Documents are defined in the General Conditions and are incorporated herein by reference.

ARTICLE 2. TIME OF COMPLETION

The Contractor shall commence the work promptly upon the date established in the Notice to Proceed. If there is no Notice to Proceed, the date of commencement of the Work shall be the date of this agreement or such other date as may be established therein.

The Contractor shall achieve Substantial Completion within 120 calendar days from the date of Notice To Proceed or the date of this agreement.

ARTICLE 3. CONTRACT SUM

The Owner agrees to pay, and the Contractor agrees to accept in full performance of this contract, the sum of _____, which sum also includes the cost of a 100% Performance Bond and a 100% Payment Bond, said bonds having been posted by the Contractor pursuant to State Law.

ARTICLE 4. PAYMENT

The Owner agrees to pay the Contractor from time to time as the work progresses, but no more than once each month after date of Notice to Proceed, and only after complying with the General Conditions and completion of Certificate of Payment for the work performed during the preceding calendar month, ninety-

five percent (95%) of the value of the labor performed and, subject to the requirements of the General Conditions, ninety-five percent (95%) of the value of materials furnished in place or on-site.

Such evidence of labor performed and materials furnished as the Owner may desire shall be supplied by the Contractor at time of request for Certificate of Payment of account. Materials for which payment has been made cannot be removed from job site.

Retainage Reduction - Five percent (5%) of the earned amount shall be retained from each monthly payment until fifty percent (50%) of the dollar amount of the contract has been earned. During the last fifty percent (50%) of the contract, future retainage amounts may be reduced at the Owner's sole option if requested by Contractor.

ARTICLE 5. INDEBTEDNESS

Before final payment is made, the Contractor must submit evidence in the form of a final waiver of lien or claim to the Owner that all payrolls, materials bills, subcontracts and outstanding indebtedness in connection with the work have been paid or what arrangements have been made for their payment.

Payment will be made without unnecessary delay and after receipt of such evidence as mentioned above and final acceptance of the work by the Owner.

ARTICLE 6. ADDITIONAL WORK

It is understood and agreed by the parties hereto that no money will be paid to the Contractor for any additional labor or materials furnished unless a new contract in writing or a modification hereto for such additional materials or labor has been executed by the Owner and Contractor. The Owner specifically reserves the right to modify or amend this contract and the total sum due hereunder either by enlarging or restricting the scope of work.

ARTICLE 7. ACCEPTANCE

The work shall be inspected for acceptance by the Engineer promptly upon receipt of notice from the Contractor that the work is complete and ready for inspection.

ARTICLE 8. DISPUTES PERTAINING TO PAYMENT FOR WORK

Should disputes arise respecting the value of any work done, or any work omitted, or of any extra work which said Contractor may be required to perform, or respecting any other elements involved in this contract, said dispute shall be brought to the attention of the Engineer and Program Manager who will attempt to settle matters. If he/she is unsuccessful, the dispute will be brought to the attention of the Town of Smithfield and their decision shall be final and conclusive. Any claims, disputes or other matters in question between the parties to this Agreement shall not be subject to binding arbitration. Any and all claims or disputes, or other matters in question between the parties arising out of or relating to this Agreement or a breach thereof shall be resolved by appropriate proceedings in the Isle of Wight County Circuit Court, and in no other forum.

ARTICLE 9. TERMINATION FOR BREACH, ETC

If the Contractor shall be adjudged bankrupt or if he should make a general assignment for the benefit of his creditors or if a receiver should be appointed on account of his insolvency, or if he or any of his

subcontractors violate any of the provisions of this contract, the Owner may serve written notice upon him of its intention to

terminate said contract; and unless, within ten (10) days after the serving of such notice, such violation shall cease, the Owner then may take over the work and prosecute same to completion by contract or by any other method it may deem advisable for the account and at the expense of the Contractor. The Owner may take possession of and utilize in completing the work, such materials, appliances, paint, and any other property belonging to the Contractor as may be on the site of the work and necessary therefore. The Owner may, at any time upon ten (10) days written notice to the Contractor, terminate (without prejudice to any right or remedy of the Owner) the whole or any portion of the work for the convenience of the Owner. In the event that it should be necessary for the Owner to bring legal action against the Contractor to enforce any provision of this contract, then the Owner shall be entitled to recover its attorney's fees and costs expended therefor.

ARTICLE 10. OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNT AND MAKE APPLICATION THEREOF

The Owner may withhold from payment to the Contractor such an amount or amounts as, in its judgment, may be necessary to pay just claims against the Contractor or any subcontractor for labor and services rendered and materials furnished in and about the work. The Owner may apply such withheld amounts on the payment of such claims in its discretion. In so doing, the Owner shall be deemed the agent of the Contractor and payments so made by the Owner shall be considered as payment made under the Contract by the Owner as to such payments made in good faith. Such payments may be made without prior determination of the claim or claims.

ARTICLE 11. LIABILITY AND INDEMNIFICATION

The Contractor agrees that it/he shall at all times protect and indemnify and save harmless, the Town of Smithfield and all institutions, agencies, departments, authorities and instrumentalities of the Town and any member of their governing bodies or of their boards or commissions or any of their elected or appointed officers or any of their employees or authorized volunteers as described in the General Conditions of the project specifications which are included herein by reference, from any and all claims, damages of every kind and nature made, rendered or incurred by or in behalf of any person or corporation whatsoever, including the parties hereto and their employees that may arise, that occur or grow out of any acts, actions, work or other activity done by the said Contractor, its employees or agents in the performance and execution of this contract.

ARTICLE 12. SUBCONTRACTOR

No part of this contract shall be sublet by the Contractor without prior written approval of the Owner.

ARTICLE 13. LIQUIDATED DAMAGES

Should the Contractor fail to Substantially Complete the work on or before the Substantial Completion Date referred to in Article 2 hereof, Contractor shall pay Owner the sum of \$500.00 for each consecutive calendar day that terms of the Contract remain unfulfilled.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Owner of any of his rights under the Contract. Liquidated damages will

be calculated and assessed based on provisions defined in the General Conditions and the date upon which the Program Manager and Engineer certify that all items on the Substantial Completion "Punch List" are complete. The sums mentioned above shall represent the actual measure of liquidated damages which the Owner will sustain per diem by failure of the undersigned to complete the Work at the times stipulated. The sum is in no way to be considered a penalty and shall not limit the Owner's other remedies available at law or equity.

ARTICLE I4. VIRGINIA PUBLIC PROCUREMENT ACT.

Contractor agrees to comply with all of the mandatory provisions of the Virginia Public Procurement Act, which are incorporated herein by reference, including those concerning non-discrimination, payment of subcontractors, employment of aliens, maintaining a drug free workplace and maintaining all state licenses and SCC corporate registration. Contractor's tax identification number is _____.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

CONTRACTOR:

BY: _____

ATTEST

BY: _____

BY: _____

OWNER: TOWN OF SMITHFIELD

BY: _____

Michael R. Stallings, Town Manager

ATTEST

BY: _____

Lesley G. King, Clerk

APPROVED AS TO FORM:

BY: _____

William Riddick, Town Attorney

IV. PERFORMANCE BOND

Bond No. _____

Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____
_____ of _____

_____, hereinafter called the Contractor and _____ a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the Surety, and authorized to transact business within the Commonwealth of Virginia as the Surety, are held and firmly bound unto _____ as Owner, in the sum of _____ dollars (\$ _____), lawful money of the United States of America, for payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Agreement, hereto attached, with the Owner dated _____, 20____, for _____

NOW THEREFORE, if the Contractor, and its successors and assigns, shall at all times duly, promptly, and faithfully perform the Work and any alteration in or addition to the obligations of the Contractor arising thereunder, including the matter of infringement, if any, of patents or other proprietary rights, and shall assure all guarantees against defective workmanship and materials, including the guarantee period following final completion by the Contractor and final acceptance by the Owner and comply with all the covenants therein contained in the Specifications, Drawings, and other Contract Documents required to be performed by the Contractor, in the manner and within the times provided in the Agreement, and shall fully indemnify and save harmless the Owner from all costs and damage which it may suffer by reason or failure to do so, and shall fully reimburse and repay it all outlay and expenses which it may incur in making good any default, and reasonable counsel fees incurred in the prosecution of or defense of any action arising out of or in connection with any such default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be performed thereunder, or payment thereunder before the time required therein, or waiver of any provision thereof, or assignment, subletting or transfer thereof or any part thereof, shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, addition to the terms of the Contract Documents or any such payment, waiver, assignment, subcontract or transfer.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Whenever Contractor shall be declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Owner shall have the right, at its option, to require the Surety to promptly proceed to remedy the default within 30 days of notice by proceeding or procuring others to proceed with completing the Agreement with its terms and conditions; and all reserves, deferred payments,

and other funds provided by the Agreement to be paid to Contractor shall be paid to Surety at the same times and under the same conditions as by the terms of that Agreement such fund would have been paid to Contractor had the Agreement been performed by Contractor; and Surety shall be entitled to such funds in preference to any assignee of Principal of any adverse claimant. Notwithstanding the above, the Owner shall have the right, with the approval of the Surety which shall not be unreasonably withheld, to take over and assume completion of the Agreement and be promptly paid in cash by the Surety for the cost of such completion less the balance of the Contract price.

IN WITNESS WHEREOF, all above parties bounded together have executed this instrument this ____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____ (Seal)

Name: _____

Title: _____

Attest

SURETY

By: _____ (Seal)

Attest

APPROVED AS TO FORM: _____, 20____

OWNER

NOTE: Date of Bond shall not be prior to the date of the Agreement. If the Contractor is a partnership, all partners shall execute the Bond.

IMPORTANT: The Surety named on this Bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent shall be accompanied by a certified copy of the authority to act for the Surety at the time of signing of this Bond.

V. PAYMENT BOND

Bond No. _____

Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____
_____ of _____
_____ hereinafter called the Contractor and _____ a corporation duly
organized and existing under and by virtue of the laws of the State _____, hereinafter called
the Surety, and authorized to transact business within the Commonwealth of Virginia as the Surety, are held
and firmly bound unto _____ as Owner, in the sum
of _____ dollars (\$ _____), lawful money of the United States of America, for
payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and
each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these
presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Agreement, hereto attached, with the
Owner dated _____, 20____, for _____

NOW THEREFORE, if the Contractor shall promptly make payments to all persons, firms, subcontractors,
and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in
the Agreement, and any authorized extension or modification thereof, including all amounts due for
materials, lubricants, oil, gasoline, repairs on machinery, equipment, and tools consumed, used or rented in
connection with the construction of the Work, and all insurance premiums on the Work, and for all labor
performed in the Work, whether by Subcontractor or otherwise, then this obligation shall be void, otherwise
to remain in full force and effect.

PROVIDED, HOWEVER, that the Surety, for value received, hereby stipulates and agrees that no change,
extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be
performed thereunder, shall in any way affect its obligation on this Bond, and it does hereby waive notice of
any such change, extension of time, alteration, or addition to the terms of the Contract Documents.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the
right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, all above parties bounded together have executed this instrument this ____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____(Seal)

Name: _____

Title: _____

Attest

SURETY

By: _____(Seal)

Attest

APPROVED AS TO FORM: _____, 20_____

OWNER

NOTE: Date of Bond shall not be prior to the date of the Agreement. If the Contractor is a partnership, all partners shall execute the Bond.

IMPORTANT: The Surety named on this Bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent shall be accompanied by a certified copy of the authority to act for the Surety at the time of signing of this Bond.

VI. NOTICE TO PROCEED

TO: _____

DATE: _____

PROJECT: _____

You are hereby notified to commence Work in accordance with the Agreement dated _____, 20____, on or before _____, 20____, and you are to substantially complete the Work within _____ Days thereafter and reach Final Completion of the Work within _____ Days thereafter. The date of Final Completion of all Work is therefore _____, 20____.

Liquidated damages as stipulated in the Bid form, in the amount of \$_____ per Day for failure of the Contractor to substantially complete the Work by the date for Substantial Completion and \$_____ per Day for failure to complete the Work by the date for Final Completion, will be assessed by the Owner as stated above or as may be modified by duly executed Change Orders.

OWNER: _____

BY: _____

TITLE: _____

ACCEPTANCE OF NOTICE:

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

this the _____ day of

_____, 20 ____

CONTRACTOR: _____

BY: _____

TITLE: _____

VII. NOTICE OF INTENT TO AWARD

TO: _____

PROJECT TITLE: _____

The Owner has considered all the Bids submitted for the above described Work in response to its Invitation for Bids dated _____, 20__, and Instructions to Bidders.

This is to advise that the Owner intends to award the contract for this Work to _____.

Dated this _____ day of _____, 20__.

OWNER

Owner
By: _____
Name
Title: _____

VIII. ESCROW AGREEMENT

THIS ESCROW AGREEMENT, made and entered into this _____ day of _____, 20____, by, between and among the _____ (Owner) and _____ (Contractor), and _____ (Bank), a trust company, bank, or savings and loan institution with its principal office located in the Commonwealth and _____ (Surety), provides:

8.1 The Owner and the Contractor have entered into an Agreement dated (month, date, year), with respect to a Project titled _____ (the Agreement). This Escrow Agreement is pursuant to, but in no way amends or modifies the Agreement. Payments made hereunder or the release of funds from escrow shall not be deemed approval or acceptance of performance by the Contractor.

8.2 In order to assure full and satisfactory performance by the Contractor of its obligations under the Agreement, the Owner is entitled to retain certain amounts otherwise due the Contractor, known as retainage. The Contractor has, with the approval of the Owner, elected to have such retainage held in escrow by the Bank. This document sets forth the terms of the escrow. The Bank shall not be deemed a party to, bound by, or required to inquire into the terms of the Agreement or any other instrument or agreement between the Owner and the Contractor.

8.3 The Owner shall from time to time pursuant to its Agreement pay to the Bank amounts retained by it under the Agreement. Except as to amounts actually withdrawn from escrow by the Owner, the Contractor shall look solely to the Bank for the payment of funds retained under the Agreement and paid by the Owner to the Bank.

The risk of loss by diminution of the principal of any funds invested under the terms of this Escrow Agreement shall be solely upon the Contractor.

8.4 Funds and securities held by the Bank pursuant to this Escrow Agreement shall not be subject to levy, garnishment, attachment, lien or other process whatsoever. The Contractor agrees not to assign, pledge, discount, sell or otherwise transfer or dispose of its interest in the escrow account or any part thereof, except to the Surety.

8.5 The following securities, and none other, are approved securities for all purposes of this Escrow Agreement:

- A. Unites States Treasury Bonds, United States Treasury Notes, Unites States Treasury Certificates of Indebtedness or United States Treasury Bills;
- B. Bonds, notes and other evidences of indebtedness unconditionally guaranteed as to the payment of principal and interest by the United States.
- C. Bonds or notes of the Commonwealth of Virginia;
- D. Bonds of any political subdivision of the Commonwealth of Virginia, if such bonds carried, at the time of purchase by the Bank or deposit by the Contractor, a Standard and Poor's or Moody's Investors Service rating of at least "A"; and,
- E. Certificates of deposit issued by commercial banks located within the Commonwealth, including, but not limited to, those insured by the Bank and its affiliates.

- F. Any bonds, notes, or other evidences of indebtedness listed in Paragraphs A through C may be purchased pursuant to a repurchase agreement with a bank, within or without the Commonwealth of Virginia having a combined capital, surplus and undivided profit of not less than \$25,000,000, provided the obligation of the Bank to repurchase is within the time limitations established for investments as set forth herein. The repurchase agreement shall be considered a purchase of such securities even if title, and/or possession of such securities is not transferred to the Escrow Agent, so long as the repurchase obligation of the bank is collateralized by the securities themselves, and the securities have on the date of the repurchase agreement a fair market value equal to at least 100% of the amount of the repurchase obligation of the Bank and the securities are held by a third party, and segregated from other securities owned by the Bank.

No security is approved hereunder which matures more than five years after the date of its purchase by the Bank or deposit by the Contractor.

- 8.6 The Contractor may from time to time withdraw the whole or any portion of the escrowed funds by depositing with the Bank securities approved, in writing, by the Owner in an amount equal to, or in excess of, the amount so withdrawn. Any securities so deposited or withdrawn shall be valued at such time of deposit or withdrawal at the lower par or market value, the latter as determined by the Bank. Any securities so deposited shall thereupon become a part of the escrowed fund.

Upon receipt of a direction signed by the chief administrative and financial official of the Owner, the Bank shall pay the principal of the fund, or any specified amount thereof, to the Owner. Such payment shall be made as soon as is practicable after receipt of the direction.

Upon receipt of a direction signed by either the chief administrative or the chief financial official on behalf of the Owner, the Bank shall pay and deliver the principal of the fund, or any specified portion thereof, to the Contractor, in cash or in kind, as may be specified by the Contractor. Such payment and delivery shall be made as soon as is practicable after receipt of the direction.

- 8.7 For its services hereunder the Bank shall be entitled to a reasonable fee in accordance with its published schedule of fees or as may be agreed upon by the Bank and the Contractor. Such fee and any other costs of administration of this Escrow Agreement shall be paid from the income earned upon the escrow fund and, if such income is not sufficient to pay the same, by the Contractor.

Under no circumstances shall the Owner be responsible to the Bank for any fee or costs of administering this Escrow Agreement, account, or escrow fund.

- 8.8 The net income earned and received upon the principal of the escrow fund shall be paid over to the Contractor in quarterly or more frequent installments. Until so paid or applied to pay the Bank's fee or any other costs of administration such income shall be deemed a part of the principal of the fund. All income earned shall be reported by the Bank to the Internal Revenue Service and other taxing authorities on the Contractor's Tax. I.D. Number, except for interest withdrawn by the Owner pursuant to paragraph IV.

- 8.9 The Surety undertakes no obligation hereby but joins in the escrow Agreement for the sole purpose of acknowledging that its obligations as surety for the Contractor's performance of the Agreement are not affected hereby.

WITNESS the following signatures, all as of the day and year first above written.

OWNER:

Name of Owner

By: _____

Name

Title

CONTRACTOR:

Name of Contractor

Contractor's Tax I.D. Number

By: _____

Officer, Partner, or Owner

BANK:

Name of Bank

Mailing Address for Payments

Account Number

By: _____

President/Vice-President

SURETY:

Name of Surety

By _____

Attorney-in-Fact

End of Section

SECTION 104
SCOPE OF WORK

I. INTENT OF AGREEMENT

- 1.1 The intent of the Agreement is to provide for completion of the Work specified therein.
- 1.2 If, during the performance of the Work, the Contractor finds a conflict, error or discrepancy in the Contract Documents, the Contractor shall so report to the Owner in writing at once and before proceeding with the Work affected thereby, except in the case of emergency or public safety, shall obtain a written interpretation or clarification from the Owner however, the Contractor shall not be liable to the Owner for failure to report any conflict, error or discrepancy in the Contract Documents unless the Contractor has actual knowledge thereof or should reasonably have known thereof.

II. AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS

- 2.1 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by a Change or Field Order pursuant to Section 109 II.

III. EXPLORATIONS AND REPORTS

- 3.1 Reference is made to the Special Provisions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by the Owner in preparation of the Contract Documents.
- 3.2 The Contractor shall visit the site of the proposed Work and make such explorations as the Contractor determines to be necessary.

IV. UNDERGROUND FACILITIES

- 4.1 If an Underground Facility is uncovered or revealed not in the Contract Documents and which the Contractor could not reasonably have been expected to be aware of, the Contractor shall, promptly after becoming aware thereof and before performing any Work affected thereby, identify and immediately notify the owner of such Underground Facility and give written Notice thereof to that owner and to the Owner.
- 4.2 If the existence of an Underground Facility described above unavoidably impacts the installation of the Work, the Contractor shall, to the fullest extent possible, continue the Work on other portions of the site. All delays must be shown by the Contractor to be directly attributable to said unforeseen conditions and limited to the time actually occasioned by such unforeseen conditions, and that the Contractor has prosecuted the other portions of the Work to the fullest extent possible.

V. SUBSURFACE CONDITIONS

- 5.1 The Contractor shall promptly, and if possible, before such conditions are disturbed, except in the event of an emergency, notify the Owner by written Notice of:
- A. subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents; or
- 5.2 The Owner shall promptly investigate the conditions, and if it is confirmed that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the Work, an equitable adjustment shall be made and the Agreement shall be modified by a Change Order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless the Contractor has given the required written Notice; provided that the Owner may, if the facts so justify, consider and adjust any such claims asserted before the date of final payment.
- 5.3 All required written Notices shall be submitted to the Owner within 20 Days after occurrence of the event giving rise to such claim, or within 20 Days after the claimant recognizes the condition, whichever is later.

VI. SITE SECURITY

- 6.1 The Contractor shall be responsible for the security and safety of all project facilities including, but not limited to, all equipment, materials, site structures, and construction thereon. All security measures deemed necessary by the Contractor to comply with this requirement shall be at the Contractor's expense at no additional cost to the Owner. The Contractor shall be responsible for all site security until final acceptance of the Work by the Owner.

VII. CLEAN-UP, DISPOSAL AND RESTORATION

- 7.1 The Contractor shall maintain the site of the project in an orderly and clean condition and shall at intervals of no more than three (3) working days and at its expense, remove and legally dispose of accumulations of rubbish or refuse materials, surplus concrete, mortar and excavated materials not required or suitable for backfill from public and private property and rights-of-way. Washings from concrete mixers or mixing boxes shall not be deposited directly or indirectly in the drainage or sewer system or on paved streets. The Contractor shall keep the site, inclusive of vehicular and pedestrian traffic routes through the site, free of dirt and dust by periodic blading, power brooming, watering or other approved means. Road surfaces adjacent to the Work area shall be cleaned of soil with mechanical brooms or other approved methods at the end of each working day. Road shoulders and driveways shall be stabilized so as to allow traffic flow (including mail and paper delivery vehicles, school buses and emergency vehicles) by the end of each working day.
- 7.2 The Contractor shall confine all equipment, the storage of materials and equipment, and the operations of workmen to areas permitted by law, ordinances, permits, or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.
- 7.3 Upon completion and before final acceptance of the Work performed under the Agreement, the Contractor shall remove and legally dispose of all rubbish, surplus or discarded materials, false work, forms, temporary structures, field offices, signs, temporary erosion and siltation control measures, and equipment and machinery, and shall leave the site and ground occupied in connection with the performance of the Work in the conditions existing before the Work was started, to the satisfaction of the Owner.

- 7.4 All waste materials, including but not limited to excavated materials, demolished pavement, arboreal (landscaping) waste and other debris, that are not suitable for Project related purposes (e.g., backfill) or are surplus to the needs of the Project, both as determined by the Owner, shall become the property of the Contractor. The Contractor shall dispose of all such material in accordance with his accepted Disposal Plan, as specified below, at no additional cost to the Owner.
- A. The Contractor shall submit a Disposal Plan for review and acceptance by the Owner prior to performing any Work that might generate waste materials. The plan shall include a complete description of the materials that are expected to be encountered based on the Geotechnical Plan and their proposed disposal site(s). The Contractor may change his Disposal Plan only by written notice to the Owner. The acceptance of a plan and/or any related notice to the Owner must be evidenced by a written response from the Owner.
 - B. The Contractor shall insure that all permits related to his disposal operations have been obtained, and the Contractor shall comply with all requirements of those permits. The Contractor shall show evidence that all required permits have been obtained for all disposal sites by submitting a copy of all such permits to the Owner as part of the Contractor's Disposal Plan.

End of Section

SECTION 105
CONTROL OF WORK

I. REUSE OF CONTRACT DOCUMENTS

- 1.1 Neither the Contractor nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with the Owner shall have or acquire any title to or ownership rights in any of the Contract Documents (or copies thereof) prepared by or bearing the seal of the Engineer; and, they shall not reuse any of the Contract Documents on extensions of the Project or any other project without written consent of the Owner and Engineer and specific written verification by the Owner.

II. COPIES OF CONTRACT DOCUMENTS

- III.** A bid package including detailed specifications may be obtained from the Town of Smithfield or by visiting the town website at www.smithfieldva.gov or eVA.virginia.gov.

IV. CONTRACT DOCUMENTS

- 3.1 The Contract Documents will govern the Work set forth therein.

In cases of conflicts, Special Provisions shall govern over the *Regional Construction Standards*; Specifications shall govern over Drawings; figure dimensions shall govern over scaled dimensions; and, detailed Drawings shall govern over general Drawings; unless, the interpretation would result in a violation of any law or regulation applicable to the performance of the Work

- 3.2 The Contractor shall, upon discovering any error, omission, or discrepancy in the Contract Documents, immediately notify the Owner.

V. SHOP DRAWINGS AND SUBMITTALS

- 4.1 The Contractor shall compile a complete and comprehensive schedule of all the submittals anticipated to be made during the progress of the Work. The schedule shall include a list of each type of item for which the Contractor's drawings, Shop Drawings, material affidavits, material samples, certificates, warranties, guarantees, operations and maintenance manuals, testing and adjustment reports, plans, schedules or other types of submittals are required by the Contract Documents.
- 4.2 Prior to each submittal, the Contractor shall carefully review and coordinate all aspects of each item or sample submitted with any other item or sample being submitted and verify that each item and sample adheres in all respects with the requirements of the Contract Documents.
- 4.3 The Contractor shall certify that all materials used in the Work are in complete compliance with all specified provisions. Certification shall not be construed as relieving the Contractor from its responsibility of furnishing satisfactory materials. At the time of each submission, the Contractor shall in writing call the Owner's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Documents. By making a submission for approval, the Contractor shall be deemed to have certified that he has checked the items in the Shop Drawings before submitting them and that he is satisfied that, in their present state, they not only meet the requirements of the Contract Documents, but will present no difficulties in the performance and completion of the Work. The Contractor shall clearly note his approval on the Shop Drawings prior

to submission to the Owner. Failure of the Contractor to note his approval will be reason for the Owner to return such submission to the Contractor unchecked.

1. If it appears to the Owner that the Shop Drawings submitted by the Contractor have not been properly checked, even though the Contractor's approval has been noted thereon, Owner may return such submission to the Contractor unchecked.
 2. Markings, written or otherwise, made by the Contractor or by his suppliers or manufacturers must be made on the Submittal in a color other than red. RED is reserved for the exclusive use of the reviewer in marking Submittals.
- 4.4 The Contractor shall submit four (4) copies, plus the number of copies desired to be returned, of Shop Drawings or submittals that are required by Section 105 or the Special Provisions. Each submission shall be accompanied by letter of transmittal in duplicate, listing the contents of the submission and identifying each item by reference to specification section or Drawing. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show the Owner the materials and equipment the Contractor proposes to provide. Digital Shop Drawing submittals may be made when acceptable to the Owner and all provisions in this section are satisfied.
- 4.5 The Contractor shall also submit samples to the Owner for review and approval in accordance with the accepted schedule of submittals. Each sample shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as the Owner may require for review. The review of a separate item or sample will not indicate approval of any assembly in which the separate item or sample functions.
- 4.6 The Contractor is responsible for submitting all Shop Drawings and schedules in a timely manner to avoid delaying the Work. The Owner shall within 21 Days after receipt, return Shop Drawings and schedules to the Contractor indicating approval or disapproval.
- 4.7 Review and/or approval of Shop Drawings will be for general conformance with the Contract Documents and shall not relieve the Contractor from the responsibility of furnishing materials and equipment of proper dimension, size, quality, quantity, and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Approval shall not be construed as permitting any departure from the Project requirements, authorization of any increase in price, or approval of departures from additional details or instructions previously furnished by the Owner.
- 4.8 Before submitting each Shop Drawing or sample, the Contractor shall have determined and verified:
- A. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 - B. All materials with respect to the intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - C. All information relative to the Contractor's sole responsibility in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and progress incident thereto.
- 4.9 Each Shop Drawing and sample submission shall bear a stamp or specific written indication that the Contractor has satisfied Contractor's obligation under the Contract Documents with respect to the

Contractor's review and approval of that submission. The Contractor's Shop Drawing stamp shall be as follows (or as otherwise approved by the Owner and Engineer):

<p>(Owner's Name) (Project Name)</p> <p>Shop Drawing No.: _____</p> <p>Specification Section: _____</p> <p><i>With respect to this Shop Drawing or Sample, I have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated this Shop Drawing or Sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.</i></p> <p>_____ <i>No variation from Contract Documents</i></p> <p>_____ <i>Variation from Contract Documents as shown</i></p> <p>(Contractor's Name and Address)</p> <p>By: _____</p> <p>Date: _____</p>
--

- 4.10 The Engineer will review and approve or disapprove or return as incomplete Shop Drawings and samples in accordance with the schedule of submittals submissions accepted by the Engineer. The Engineer's review and approval or disapproval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The Contractor shall make corrections required by the Engineer, and shall return the requested number of copies of Shop Drawings and samples for review and approval. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer on previous submittals. Upon approval, two marked copies will be returned to the Contractor.
- 4.11 No progress payments will be made to the Contractor until the schedules are submitted to and acceptable to the Engineer. The progress schedule shall be acceptable to the Engineer as being the Contractor's schedule for the orderly progression of the Work to completion within any specified Contract Times, but such acceptance will neither impose on the Engineer responsibility for the sequencing, scheduling or progress of the Work nor interfere with or relieve the Contractor from the Contractor's full responsibility therefor.
- 4.12 The Engineer will record time required by the Engineer or Engineer's consultants for excessive submittal review occasioned by the Contractor's re-submission, in excess of one re-submission of a required submittal, caused by unverified, unchecked or un-reviewed, incomplete, inaccurate or erroneous, or nonconforming submittals. The Engineer's costs will be an estimated average billing

rate for labor plus related expenses and shall be paid by the Contractor upon terms satisfactory to the Owner.

- 4.13 Within ten (10) Days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer for approval a schedule listing the manufacturer of the items of equipment and materials proposed for the construction. Following approval of the schedule, no changes in material or equipment from those listed will be allowed except in unusual or extenuating circumstances. When such circumstances arise, the Contractor shall request, in writing, the Owner's approval of the proposed change, stating the circumstances necessitating such a change. The intent of this schedule is to name the manufacturers of material specified by a product standard and to designate which manufacturer will be used when more than one has been named for an item. The schedule shall not be interpreted as allowing any change from base Bid items or those substitute items offered with the Bid and accepted in the Agreement.
- 4.14 Submittals shall be made in logical groupings representing all submittals from a technical specification section and/or, where appropriate, related section(s). Shop drawing submissions lacking all required submittals under a technical specification section(s) will be returned without review.
- 4.15 The approval of Shop Drawings shall not relieve the Contractor from the responsibility for proper fittings and construction of the Work nor from furnishing materials and work required by the Contract which may not be indicated on the Shop Drawings when approved.
- 4.16 Where a Shop Drawing or sample is required by the Specifications, and related work is performed prior to the Owner's review and approval of the pertinent submission, such work will be the sole responsibility of the Contractor. Owner shall have the right to inspect any such Work, but failure of Owner to inspect such Work shall not be deemed an acceptance by the Owner.
- 4.17 In proposing alternate materials or construction methods or in requesting Owner determination of alternate materials, submittals must clearly demonstrate that the proposed alternate items clearly meet, in all respects, the requirements of the Contract Documents, design intent of the Project. The burden of proof in all such determinations is up to the Contractor and the Owner's determination is un-reviewable and final. All such proposals count as submittals in determining the cost of additional reviews in accordance with paragraph 4.12 above.
- 4.18 Manufacturer's Certificates
 - A. The Contractor shall furnish at the time of submitting Shop Drawings the manufacturer's certificates for items of equipment and products in the various sections of these Specifications.
 - B. The manufacturer's warranty and certification submitted for equipment, a product, or component of a product shall indicate that the manufacturer has examined the Contract Documents and the equipment, product or component of a product provided will meet the performance criteria and conforms in all respects to the requirements of the Contract Documents.
 - C. A statement originating from the Contractor, or any of his Subcontractors, suppliers, or any other agent, which merely indicates that a particular item of equipment, product, or component of a product, meets the requirements of the Contract Documents, shall not be considered a certificate. Any such submittal made in this manner will not be approved and the corresponding equipment, product, or component of a product, shall not be approved.

VI. RECORD DRAWINGS

- 5.1 The Contractor shall keep one record copy of all Special Provisions, Specifications, Drawings, Addenda, Written Amendments, Change Orders, Shop Drawings, Owner-approved submittals, and samples at the site in good order and annotated to show all changes made during the construction process. These documents shall be available to the Owner for examination and shall be submitted to the Owner upon completion of the Work. As-built information (including dimensions, materials, existing utilities) shall also be included on the Drawings. Progress payments may be withheld for failure to keep neat, accurate and complete record drawings.
- 5.2 The Contractor shall include any field changes, deviations from the Drawings due both to field conditions and Change Orders.
- 5.3 Record information for projects shall include the following as a minimum:
- A. Horizontal and vertical location of the water, force main, sanitary and storm sewer installed at every 100-foot station, at interconnections, and at fittings, tees, bends and offsets. The frequency and location of survey shots will match the proposed grade elevations shown on the Drawings.
 - B. Size (if greater than ¾”), material, depth and location of both ends of the water service lines are required.
 - C. Rim elevations of manholes and invert elevations of pipes entering and exiting the manhole.
 - D. Information required for public storm drain systems:
 - 1. Size, material and location of all storm sewer lines.
 - 2. Elevations shall be provided for all ditch, pipe and structure inverts and rims.
- 5.4 The Record Drawings shall include the following minimum accuracy for survey measurements and field measurements.
- A. Horizontal accuracy:
 - 1. Both surface and subsurface gravity sanitary sewer systems shall be measured in a survey to +/- 1.0 foot at the structure location.
 - 2. Storm Water Management Facilities (SWMF) shall be measured in a survey to +/- 1.0 foot, including the top of bank, bottom of bank, edge of water, pipes, structures, and setback distances to property lines and/or right-of-way lines and any unusual feature of each SWMF.
 - 3. Project landscaping shall be measured in a survey to +/- 1.0 foot. Only large significant features, such as trees, will be surveyed. The species and caliper (size) shall be noted.
 - B. Vertical accuracy:

	Survey Accuracy	Field Measurement
Manhole Rim	+/- 0.01 ft.	

Manhole Invert	+/- 0.01 ft.	
Gravity Sewer Slope	+/- 0.02%	
Valve Depth	+/- 0.1 ft.	
Pressure/vacuum systems	+/-0.05 ft.	
SWMF	+/- 0.01 ft.	
Curb/curb and gutter	+/- 0.01 ft.	
Offset		+/- 1.0 ft.
Lateral Depth		+/- 0.25 ft.

The Contractor shall provide on the record drawings, if applicable, coordinate values (northing's and easting's based on the locality's monumentation) for the following:

Gravity Sewer

- Manholes
- Cleanouts and connections to the main

Force Mains

- Valves and tracer wire boxes
- Air release assemblies
- Horizontal bends 45-degrees (and greater if allowed) and combinations of fittings equaling 45-degrees or greater, spaced no greater than 10-feet of the start of the bends to the bend's terminus
- Offsets (vertical and horizontal)
- Connections (tees and taps)
- Limits of lined pipe

Water Systems

- Water meters

5.5 Record Drawings shall be provided in two versions: a sealed PDF version and an electronic format acceptable to the Owner

VII. ACCESS TO PROJECT

6.1 The Owner, the Owner's Representatives, the Engineer, testing agencies and governmental agencies with jurisdictional interests shall have access to the Project at all times for their observations, inspecting, and testing. The Contractor shall provide proper and safe conditions for such access.

VIII. SURVEYS AND REFERENCE POINTS

7.1 The Owner shall furnish all necessary Drawings showing property lines and/or easements and the location of the Work. The Owner has established or will establish such general reference and control points and benchmarks on or about the Project site as will enable the Contractor to proceed with the Work. Prior to issuance of the Notice to Proceed, if the Contractor finds that any previously established reference points have been destroyed or misplaced, the Contractor shall promptly notify the Owner, and the Owner shall replace such general reference points and benchmarks at the Owner's expense.

7.2 The Contractor shall protect and preserve the established control points, bench marks and monuments and shall make no changes in locations without the written approval of the Owner. Any of these which may be lost or destroyed or which require shifting because of necessary changes in grades or

locations shall, subject to prior approval of the Owner, be replaced and accurately located by the Contractor, at no expense to the Owner.

IX. WORKING HOURS

- 8.1 Normal working hours shall be 7:00 a.m. to 5:00 p.m., Monday through Friday, except that Work shall not start any earlier than one-half hour after sunrise or continue beyond one-half hour prior to sunset. If the Contractor desires to perform Work outside the normal working hours, on holidays, or on weekends, the Contractor shall request permission, in writing, 48-hours in advance to allow arrangements to be made. The Contractor may be charged an inspection fee by the Owner if such Work is approved. Where the Owner specifically directs the Contractor to work outside of normal working hours, no inspection fee will be imposed. The Owner may refuse the Contractor permission to work outside the normal working hours. The Contractor shall make reasonable efforts to avoid undue noise during the night and on weekends, including, but not limited to, fireproof covering necessary to dampen excessive noise from engines or pumps which operate before 7:00 a.m. and after 9:00 p.m., if it is necessary to work at those times.
- 8.2 The Contractor shall designate a representative and furnish a telephone number at which the representative may be contacted at any time after working hours. This representative shall be empowered and authorized to provide such personnel and equipment as may be required to remedy emergency situations that may develop after normal working hours, or on weekends and holidays.
- 8.3 The Contractor shall receive approval of the Owner, in advance, of any Work to be performed on holidays. The Owner reserves the right to deny permission to work on Sundays and/or holidays without cause.
- 8.4 Holidays are as listed below:
- | | |
|-------------------------------|---|
| New Years' Day | 1 st day of January |
| Martin Luther King's Birthday | 3 rd Monday in January |
| President's Day | 3 rd Monday in February |
| Memorial Day | Last Monday in May |
| Independence Day | 4 th day in July |
| Labor Day | 1 st Monday in September |
| Veteran's Day | 11 th day of November |
| Thanksgiving Day | 4 th Thursday in November |
| Day after Thanksgiving | Friday after 4 th Thursday in November |
| Christmas Eve | 24 th day of December |
| Christmas Day | 25 th day of December |

If a holiday falls on a Sunday, the following Monday shall be considered the holiday. If these dates fall on a Saturday, the previous Friday shall be considered the holiday. If any part of a two-day holiday falls on a weekend, the observance of the holiday shall be scheduled at the Owner's discretion in such a way as to result in a four-day weekend.

The Contractor's attention is called to Section 109-1.6.C.1.d. regarding Owner compensation by the Contractor for overtime Work performed outside normal working hours.

X. PROJECT COORDINATION

9.1 Coordination with Owner

- A. The Contractor shall coordinate all construction activities with the Owner and shall obtain the Owner's approval as to schedule of Work, permits, temporary Work, and traffic control.
- B. Progress meetings shall be held monthly on a date to be set by the Owner. The Contractor shall be present at all progress meetings. If progress is not made as scheduled, or if the Owner desires to discuss revised progress schedules or the quality of workmanship or other aspects of the Work, additional progress meetings can be required.

9.2 Coordination with Utilities

- A. Before the initiation of any excavation, the Contractor shall locate all existing utilities, culverts, and other structures. Work shall be coordinated with affected utility companies. Prior to excavation, the Contractor shall contact MISS UTILITY at (800) 552-7001 and comply with all MISS UTILITY requirements.
- B. All existing utilities, both public and private (including sewer, gas, water, electrical services, etc.), shall be protected and their operation shall be maintained throughout the course of the Work. Any temporary shutdown of an existing service shall be arranged by the Contractor between the Contractor and the responsible agency. The Contractor shall assume full responsibility and defend and hold the Owner harmless from the result of any damage that may occur as a result of the Contractor's activities.
- C. If any utility service is interrupted as a result of accidental breakage or of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the authority in the restoration of service. If utility service is interrupted, repair work shall be continuous until service is restored. The Contractor shall be responsible for any damage to utilities that are attributable to his neglect or methods of performing the Work.
- D. Existing facilities (such as water and sewer valves) shall be operated only by the facility owner or under the direct supervision of the facility owner's personnel. The Contractor shall inform the owner at least 48-hours in advance of the need for the operation of existing facilities.

XI. SUPERVISION

- 10.1 The Contractor shall supervise and direct the Work, and shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor shall employ and maintain on the Project a qualified supervisor who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be the same as if mailed to the business address of the Contractor. The supervisor or a designated representative shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. The Contractor shall notify the Owner in writing prior to any change of supervisor, and receive the Owner's approval for the replacement.
- 10.2 Upon notification to the Contractor, the Owner reserves the right to suspend the Work until such time as a supervisor satisfactory to the Owner is assigned to the project. Contract Time shall not be

extended for such suspension nor shall the Contractor be entitled to any additional payment of any kind whatsoever as a result of such suspended Work.

- 10.3 Any employee of the Contractor or Subcontractor who is deemed unsuitable may be removed from the job site by the Owner, provided that Written Notice and just cause is given to the Contractor. Said employee shall be removed immediately upon receipt of said Notice.

XII. UNCOVERING WORK

- 11.1 If any Work has been covered or concealed without the Owner's approval prior to being covered or concealed, the Owner may request to see such Work and it shall be exposed by the Contractor. The Contractor shall pay the cost of opening or uncovering and replacement and shall, in addition, at no cost to the Owner, make the necessary corrections to bring the Work into accord with the Contract Documents.
- 11.2 Uncovering Work shall be at the Contractor's expense unless the Contractor has given the Owner timely notice of the Contractor's intention to cover the same and the Owner has not acted with reasonable promptness in response to such notice.
- 11.3 If the Owner considers it necessary or advisable that covered Work previously approved be re-inspected or tested by others, the Contractor, at the Owner's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Owner may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor shall bear all the expenses of such uncovering, exposure, observation inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time or both directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

XIII. REMOVAL OF UNACCEPTABLE WORK

- 12.1 All Work that does not conform to the requirements of the Contract Documents shall be unacceptable.
- 12.2 The Contractor shall remove or correct all unacceptable and defective Work or materials. The replacement of Work and materials shall conform to the Contract Documents or be in a manner acceptable to the Owner. The Contractor shall bear all costs of such correction and/or removal and replacement.
- 12.3 Work done contrary to or regardless of the instructions of the Owner, Work done beyond the lines shown or as directed, except as herein provided, or any extra Work done without authority, will be considered unauthorized and will not be paid for under the provisions of the Agreement. Work so done may be ordered removed or replaced at no cost to the Owner.
- 12.4 If the Work is defective, or the Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, the Owner may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any surety or other party. If the Contractor does not remedy, remove, or replace the rejected or condemned Work as instructed by the Owner within the time

period stated by the Owner but in no case to exceed 30 Days after receiving written Notice, such remedy, removal, or replacement may be accomplished by the Owner at the Contractor's expense.

SUBSTANTIAL COMPLETION

- 13.1 Prior to Final Payment, but following completion of all required tests and inspections, the Contractor may request in writing that the Owner certify that the entire Project or any phase of the Project is Substantially Complete and request the Owner issue a Certificate of Substantial Completion. Within fourteen (14) working days the Owner will conduct an inspection of the Project with the Contractor and either issue a Certificate of Substantial Completion or notify the Contractor in writing of the incomplete items. The Certificate and attachments shall include the following:
- A. A listing of responsibilities for the security, operation, safety, maintenance, utilities and insurance on the substantially completed portion;
 - B. A tentative list of items to be completed or corrected prior to final payment; and,
 - C. The maximum time for items to be completed or corrected prior to final payment.
- 13.2 The Owner shall have the right to exclude the Contractor from the Project or phase of the Work certified to be Substantially Complete; however, the Owner will allow the Contractor reasonable access to complete or correct the Work.

XIV. USE OF COMPLETED PORTIONS

- 14.1 The Owner shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding that the time for completing the entire Work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the Work, the Contractor shall be entitled to such extra compensation or extension of time or both as the Owner and the Contractor may agree by a Change Order.

XV. FINAL INSPECTION

- 15.1 Upon receiving written Notice from the Contractor that the entire Work or an agreed upon portion is complete, the Owner will make a final inspection with the Contractor, and will notify the Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.
- 15.2 This procedure shall be repeated until all items are corrected to the satisfaction of the Owner. Only written notification to the Contractor from the Owner will constitute final acceptance of any part of the Work under the Agreement.

XVI CLAIMS

- 16.1 All claims, disputes, demands and other matters in question arising out of or relating to the Agreement or the Contract Documents, except for claims which have been waived by the Contractor's acceptance of final payment, will be addressed in accordance with the provisions of the Virginia Public Procurement Act and as stated herein; provided, however, the provisions of Section 2.2-4366 of that Act will not be applicable without the separate express written consent of the Owner.
- 16.2 Early or prior knowledge by the Owner of an existing or impending claim for damages could alter the plans, scheduling, or other action of the Owner or result in mitigation or elimination of the effect of the act objected to by the Contractor. Therefore, a written statement describing the act of omission or commission by the Owner or its agents that allegedly caused damage to the Contractor and the nature of the claimed damage shall be submitted to the Owner at the time of occurrence or beginning of the Work upon which the claim and subsequent action are based. If such damage is deemed certain in the opinion of the Contractor to result from his acting on an order from the Owner, he shall immediately take written exception to the order. Submission of a notice of claim as specified shall be mandatory. Failure to submit such notice shall be a conclusive waiver to such claim for damages by the Contractor. An oral notice or statement will not be sufficient nor will a notice or statement after the event.

If the Contractor's claim contains data that cannot be verified by the Owner's records, the data shall be subject to a complete audit by the Owner or its authorized representative if they are to be used as a basis for claim settlement.

If the Contractor wishes to make claim for an increase in the Contract Price or Contract Time, he shall submit all supporting data to the Owner and Engineer within twenty (20) Days from the time of initial occurrence. Failure to submit such data within twenty (20) Days shall be a conclusive waiver to such claim by the Contractor.

- 16.3 All claims, disputes, and other matters relating to or arising out of the Agreement or the Contract Documents pertaining to the performance of the Work and claims in respect to changes in the Contract Price or Contract times shall be submitted to the Owner and Engineer in writing. Written Notice of each such claim, dispute or other matter shall be delivered by the Contractor to the Engineer and the Owner promptly (but in no event later than twenty (20) days) after the start of the occurrence or event giving rise thereto, and written supporting data shall be submitted to the Engineer and the Owner promptly, (but not later than twenty (20) days) after the start of such occurrence or event and monthly thereafter for continuing events unless the Owner and Contractor mutually agree to extend the time required to submit the written Notice to allow for the submission of additional accurate data in support of such claim, dispute or other matter. The Owner shall submit any response to the Engineer and the Contractor within twenty (20) days after receipt of the Contractor's last submittal (unless the Owner requests reasonable additional time to evaluate the claim).

The Engineer shall render a non-binding and non-final written recommendation regarding the manner in which to resolve the dispute within twenty (20) days of receipt of the Owner's response. Engineer's written recommendation shall be used to assist the Owner and Contractor towards the expeditious and amicable resolution of their dispute.

Within ten (10) days of the delivery of Engineer's written recommendation, senior representatives of the Owner and the Contractor, having authority to settle the dispute, and the Engineer, shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to

exchange relevant information and to exercise their reasonable and good faith efforts to expeditiously resolve the dispute. The Owner's and Contractor's representatives will participate in good faith during the negotiation and will each have authority to approve changes in the Contract Time and Price, if any.

In the event a mutually acceptable agreement cannot be reached through negotiation within twenty (20) days of the delivery of Engineer's written recommendation, (or mutually agreeable longer period), or if either party will not meet within ten (10) days of the delivery of said written recommendation, the Owner or Contractor may declare, by written Notice, delivered to the other party and to the Engineer, that the negotiation was unsuccessful. If Owner chooses non-binding mediation, it shall be a condition precedent to the institution of any further administrative, legal or equitable proceedings by either party.

In the event that the negotiation process is unsuccessful and upon the Owner's request that the parties participate in non-binding mediation, the parties shall endeavor to agree to a single mediator to mediate the dispute in a session not to exceed one-half day in length, unless extended by the agreement of both parties. If the parties cannot agree on a single mediator, they shall request the chief judge of the local state circuit court to designate a mediator. Unless the parties mutually agree otherwise, the mediation shall occur within ten (10) days of the mediator's selection. The costs of the mediation shall be paid by the parties on a pro rata basis.

The results of successful mediation will be implemented by a Change Order. Should the mediation be unsuccessful, it shall be terminated by written Notice to all involved by the mediator or Owner or Contractor.

- 16.4 In the event that the Owner does not elect mediation or the mediation is unsuccessful, a formal proceeding may then be instituted by either party in a forum of competent jurisdiction within the Owner's locality. The parties' Agreement, Contract Documents, and their performance obligations shall be governed, interpreted and enforced pursuant to the laws and regulations of the Owner's locality, and in accordance with the laws of the Commonwealth of Virginia without regard to the conflicts of law principles thereof.

All disputes arising out of or relating to this Agreement, the Contract Documents, or the performance obligations of the parties shall be brought in the Circuit Court or Federal Court in Virginia having jurisdiction over the location where the Work will be or has been performed. The Agreement and the Contract Documents shall be governed by, enforced and interpreted pursuant to the laws of the Commonwealth of Virginia without regard to conflicts of law principles.

- 16.5 The Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with the Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the Owner and the Contractor may otherwise agree in writing.

XVII ENGINEER'S STATUS

- 17.1 All Work shall be performed under the general observation of the Engineer (if specified in the Special Provisions, otherwise, the Owner shall serve as the Engineer at its discretion). The Contractor shall carry out the Work in accordance with the Contract Documents. The construction means, methods, techniques, sequences of procedures, and safety precautions and programs in connection with the Work shall be at the direction and the responsibility of the Contractor. The Engineer shall have authority to and shall reject any and all Work whenever it is necessary to do so in order to insure the proper execution of the Work in accordance with the Contract Documents. The Engineer

shall have no authority to approve or order changes in the Work that alter the terms or conditions of the Agreement. The Owner shall confirm by written Notice within fourteen (14) calendar Days any oral order, direction, requirement or determination.

- 17.2 In case of the termination of the employment of the Engineer, the Owner may appoint a capable and reputable Engineer as a replacement. The status under the Agreement of the Engineer shall be that of the former Engineer.
- 17.3 Approval by the Engineer of any materials, plans, equipment or drawings proposed by the Contractor, shall be construed only to constitute an approval of general design. Such approval shall not relieve the Contractor for any responsibility for the accurate and complete performance of the Work in accordance with Contract Documents, or from any duty, obligation, performance guarantee or other liability imposed upon him by the provisions of the Agreement.

XVI. NOTICE TO COMPLY ORDER

See page 105-18.

XVII. STOP WORK ORDER

See page 105-19.

End of Section

CITY/COUNTY OF _____

NOTICE TO COMPLY

Department of _____

Pursuant to Section _____ of the Code of the City/County
of _____, Virginia, as amended, a City Manager/County
Administrator Designee inspected your site at _____
on _____, 20____ at _____ a.m. / p.m.

The following conditions of noncompliance were noted:

- ☐ SILT FENCE DOWN
- ☐ DISTURBED AREAS NOT STABILIZED
- ☐ SEDIMENT TRAPPING DEVICES NOT INSTALLED PROPERLY
- ☐ TRACKING ON PUBLIC ROAD
- ☐ OTHER: _____

The following corrective measures are needed to bring you into compliance:

- _____
- _____
- _____
- _____

These measures are to be completed before _____, 20____.

Notice ordered by _____, on _____, 20____.
(Designee of City Manager/County Administrator)

Hand Delivered _____ Certified Mail _____

If you have any questions, please call _____.
(Telephone number)

CITY/COUNTY OF _____

STOP WORK ORDER

Permit Number _____

Date _____

Department of _____

Pursuant to Section _____ of the Code of the
City/County of _____, Virginia, as amended, a substantial
Code violation exists at _____. You are
hereby notified that further Work at this location must be

IMMEDIATELY DISCONTINUED

Corrective Measures Required:

Ordered by: _____, on _____, 20____.
(Designee of City Manager/County Administrator)

Notice served to _____, on _____, 20____.

Stop Work Order in Effect Until _____

(Signature of Enforcement Officer)

SECTION 106

CONTROL OF MATERIAL

I. TESTS AND INSPECTIONS

- 1.1 All material and workmanship shall be subject to inspection, examination and test by the Owner at any time during manufacture and/or construction. The Owner shall have the right to reject defective material and workmanship or require their correction.
- 1.2 The Contractor shall provide at its expense the testing and inspection services required by the Contract Documents. The Owner will provide at his expense all inspection and testing services not required by the Contract Documents; provided, however, the Contractor will be responsible for the payment of all failing tests.
- 1.3 The Contractor shall furnish promptly without additional charge all reasonable facilities, labor, and materials, necessary and convenient for making such tests as may be designated in the Contract Documents. The Contractor shall work with the Owner and the Engineer in scheduling and coordinating Owner provided testing or inspection services.
- 1.4 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public body having jurisdiction require any Work (or part thereto) specifically to be inspected, tested, or approved by someone other than the Owner, the Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish the Owner the required certificates of inspection, or approval. The Contractor shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for the Owner's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to the Contractor's purchase thereof for incorporation in the Work.
- 1.5 Inspections, tests or approvals by the Owner shall not relieve the Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Documents.
- 1.6 The failure of the Owner to reject or condemn materials and workmanship not conforming to the Contract Documents shall not prevent the Owner from rejecting materials and workmanship found not to be in accordance with the Contract Documents at any time prior to the acceptance of the completed Work, nor shall it be considered as a waiver of any nonconformance with the Contract Documents which may be discovered later, or as preventing the Owner at any time prior to the expiration of the guarantee period or of the expiration of any applicable statutory limitation period for legal actions for Contractor default from recovering damages for work not in accordance with the Contract Documents.

II. LABOR, MATERIALS AND EQUIPMENT

- 2.1 The Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. The Contractor shall at all times maintain good discipline and order at the site.
- 2.2 Unless otherwise specified, the Contractor shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances,

fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all facilities and incidentals necessary for the furnishing, performance, testing, start-up, and completion of the Work.

- 2.3 All materials and equipment shall be of good quality and new (manufactured within two [2] years of the Bid date), except as otherwise provided in the Contract Documents. If required by the Owner, the Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents.
- 2.4 It shall be the responsibility of the Contractor to legally dispose of all excess material at his expense unless otherwise indicated on the Drawings and/or noted in the Specifications.
- 2.5 No material that is not required for the Work on this Project may be stored on site or within the Project boundaries or on land designated for Project use, unless approved by the Owner in writing prior to placement.

III. WORK BY OWNER

- 3.1 The Owner may perform other work related to the Project at the site by the Owner's own forces, have other work performed by utility owners, or let other direct contracts for Work at the site. If the fact that such other work is to be performed was not noted in the Contract Documents, Written Notice will be given to the Contractor prior to starting any such other work.

End of Section

SECTION 107

LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

I. PERMITS AND REGULATIONS

- 1.1 The Contractor shall procure all permits and licenses pay all charges, fees and taxes and give all notices necessary and incidental to the due and lawful prosecution of the Work except those provided by the Owner, and specified in the Special Provisions.
- 1.2 The Contractor shall be fully responsible for knowledge of and shall abide by each and every law, rule or regulation of all public bodies having political jurisdiction over the Project and in force at the time of the Contract; including, the safety of persons or property and the protection of persons and property from damage, injury or loss. The Contractor shall erect and maintain all necessary safeguards for such safety and protection and hold harmless the Owner and its agents, officers, or employees against any claim for liability arising from or based on any violation, whether by himself, his agents, his employees or subcontractors. If the Contractor observes that the Contract Documents are at variance with any such law, he shall promptly notify the Owner in writing. The Contractor shall execute and file the documents, statements, and affidavits required under any applicable federal or state law or regulation affecting his Bid or Agreement or prosecution of the Work thereunder. The Contractor shall permit examination of any records made subject to such examination by any federal or state law or by regulations promulgated thereunder by any state or federal agency charged with enforcement of such law. The Contractor shall not be entitled to claim any damages for delay occasioned by compliance with such laws. Where such laws are changed during the course of the Agreement, and where such changes create additional costs to the Agreement or affect the time of the Agreement, such changes shall be made effective through Change Orders prepared in accordance with the Contract Documents.
- 1.3 The Contractor shall comply fully with the U.S. Department of Labor Safety and Health Regulation promulgated under the Occupational Safety and Health Act of 1970, as amended, and under Section 107 of the Contract Work Hours and Safety Standards Act, as amended. The Contractor shall also comply fully with the Overhead High Voltage Act as set forth in Chapter 30, Title 59.1 of the Code of Virginia; Subpart P - "Elevations, Trenching and Shoring", of the Virginia Occupational Safety and Health Standards for Construction Industry; the Virginia Confined Space Standard 1910.146 of the Virginia Occupational Safety and Health Standards for General Industry; and the "Underground Utility Damage Prevention Act" as set forth in Chapter 10.3, Title 56 of the Code of Virginia, 1950, as amended. The above listing of safety laws and regulations is for informational purposes and in no way alters or limits Contractor's responsibility to comply with the safety laws of all public bodies having jurisdiction as set forth in Section 107-1.2 above.

II. LAND, EASEMENTS, AND RIGHTS-OF-WAY

- 2.1 Prior to issuance of Notice to Proceed, the Owner shall obtain all land, easements, and rights-of-way necessary for carrying out and for the completion of the work to be performed and pursuant to the Contract Documents, unless otherwise specified herein or otherwise mutually agreed. A land surveyor licensed in the Commonwealth of Virginia must perform the layout. Easements for temporary uses and detours requested by the Contractor and approved by the Owner in lieu of a detour within the right of way or easement area shall be acquired by the Contractor without the Owner being a party to the Agreement.

- 2.2 The Owner shall provide to the Contractor information that delineates and describes the lands owned, rights-of-way, or easements acquired, and permits obtained.
- 2.3 The Contractor shall provide at its own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials. The Contractor shall not use private property in connection with the Work unless prior written permission is obtained from the property owner. A copy of the written permission indicating the name, address, and phone number of the property owner shall be furnished to the Owner. Upon completion of the use of the property, the Contractor shall also furnish the Owner a release signed by the property owner indicating that the property has been satisfactorily restored.
- 2.4 The Contractor shall acquire all necessary and appropriate Permit(s) from the locality, VDOT, or both, for entrance(s) to off-site storage or lay-down yard(s) and shall abide by all conditions required by the Permit. The Contractor shall be solely responsible for all costs incurred in acquiring the Permit and all costs associated with the efforts necessary to comply to Permit requirements.

The Contractor shall utilize the most direct means of access to the Work area and shall not access the Work area through adjacent neighborhoods, parking areas, etc. Any and all damages to adjacent areas resulting from the Contractor's activities shall be the sole responsibility of the contractor and shall be repaired at the Contractor's expense, to the complete satisfaction of the Owner, locality/VDOT, and the affected property owner(s).

III. PROTECTION OF WORK, PROPERTY & PERSONS

- 3.1 The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall provide and maintain all necessary watchmen, barricades, lights, and warning signs, and take all necessary precautions for the protection and safety of the public.
- 3.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. The Contractor shall erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection, and shall notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor shall remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, or anyone for whose acts any of them will be liable.
- 3.3 The Contractor shall designate a responsible member of its organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner.
- 3.4 In accordance with generally accepted construction practices, and the requirements of OSHA, the Contractor shall be solely and completely responsible for conditions of the Project site. This requirement shall apply continuously and not be limited to normal working hours. The Contractor shall comply with Federal and State safety regulations, at the site of the Work and provide such equipment and medical facilities as necessary to supply first aid service to anyone who may be

injured. The Contractor shall promptly report in writing to the Owner all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site and which caused death, personal injury or property damages, giving full details and statement of witnesses. In addition, if death or serious injuries or serious damages are caused, the accidents shall be reported immediately to both the Engineer and the Owner. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts, in writing, to the Owner.

- 3.5 Until final acceptance of the Work by the Owner, the Contractor shall have charge and care thereof and shall take every precaution against damage to the Work or to any part thereof by action of the elements or from any other cause whether installed, in storage, or off-site. The Contractor shall rebuild, repair, restore, and make good damage to any portion of the Work occasioned by any of the foregoing causes before final acceptance and shall bear the expense thereof. The Owner may reimburse the Contractor for repair of damage to Work attributable to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor. In case of suspension of work, the Contractor shall be responsible for the Project and shall take such precautions as may be necessary to prevent damage to the Work, provide for erosion and environmental control and drainage control, and erect any necessary temporary structures, signs, or other facilities at his own expense. During the suspension of Work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract and shall take adequate precautions to protect new tree growth and other important vegetation against damage.
- 3.6 Emergency traffic such as police, fire and disaster units shall be provided reasonable access to the work area at all times. The Contractor shall coordinate partial or full street closures with all emergency services, such as police, fire and disaster units, and shall bear the responsibility of notification to same of all closures, blockages and re-openings.
- 3.7 The Contractor shall, during the progress of the Work and as directed by the Owner, remove from the Owner's property and from all public and private property and rights-of-way, at its own expense, all temporary structures, rubbish, debris, piles of earth, foreign matter, and waste materials resulting from his operations. The site of the Work shall be restored to the conditions existing before the Work was started, to the satisfaction of the Owner. Lawns, pavements, sidewalks, and other surfaces shall be preserved where practicable, but if damaged, shall be fully restored.
- 3.8 The Owner may take corrective action if the Contractor fails to perform cleanup and restoration in an orderly, continuous, and expeditious manner. The Owner may take corrective action three days after delivery of notice to do so to the Contractor and deduct the cost from any monies due the Contractor.
- 3.9 The Contractor shall preserve property and improvements along the lines of and adjacent to the Work unless their removal or destruction is called for by the Contract Documents. The Contractor shall use suitable precautions to prevent damage to such property.
- 3.10 When the Contractor finds it necessary to enter on private property, he shall secure from the property owner or lessee a written permit for such entry prior to moving thereon. An executed copy of this permit shall be furnished to the Owner.
- 3.11 The Contractor shall be responsible for damage or injury to property during the prosecution of the Work resulting from any act, omission, neglect, or misconduct in the method of executing the Work or attributable to defective Work or materials. This responsibility shall not be released until final

acceptance of the Project.

- 3.12 When direct or indirect damage is done to property by or on account of any act, omission, neglect or misconduct in the method of executing the Work or in consequence of the non-execution thereof on the part of the Contractor, the Contractor shall restore such property to a condition substantially equal to that existing before such damage was done by repairing, rebuilding or restoring, as may be directed by the Owner, or making settlement with the property owner. The Contractor shall secure from the property owner a release from any claim against the Owner without additional compensation therefor. A copy of this release shall be furnished to the Owner.
- 3.13 All property boundary markers shown on the Drawings or discovered during the course of construction shall be protected. All property boundary markers disturbed due to construction activities shall be replaced by the Contractor at no expense to the Owner. Property boundary markers shall be restored by a surveyor licensed in the State of Virginia and all restored property boundary markers shall be shown on the Record Drawings.
- 3.14 The Contractor shall employ a licensed Plumbing Contractor, who shall obtain the necessary permits and shall do all Work on private property in accordance with the International Plumbing Code, latest edition. The Owner will obtain the permission of the property owner to work on private property. No payment will be made for work done on private property until all restoration work is complete to the satisfaction of the Owner and the homeowner.
- 3.15 The Contractor will notify the affected property owners, in writing _____ Days prior to commencement of Work. "Affected Property Owners" shall be those property owners whose properties are affected by construction on the Project in the following manner: (i) restrained access to and from residences and business locations; (ii) interference with the right to enjoy one's residence or business free of disturbing and unusual environmental changes as a result of the Project, such as excessive noise, dust, light, as well as unusual working hours and odors; and (iii) the relocation of personal property, such as trees, shrubs, plants and flowers, play equipment, portable buildings, fences and automobiles, which must be moved as a result of the Project. Such Notice shall be deemed properly given if mailed by first class, postage prepaid, to the address for the property owners shown in the local tax records.
- 3.16 It shall be the Contractor's paramount responsibility to additionally notify each residence and business that construction adjacent to their property is imminent. This notification will be given and noted no less than 48 hours prior to Work commencing adjacent to the affected property. The Notice from the Contractor shall be written and may be hand delivered to each affected residence and business. A separate Notice shall be delivered each time the entrance to each residence and business will be blocked or inaccessible.
- A. If this Notice is mailed, time is to be allowed such that receipt by the addressee is at least 48 hours prior to Work commencement. Such Notice shall be deemed properly given if mailed by first class, postage prepaid, to the address for the property owners shown in the local tax records. A duplicate copy of each mailed Notice is to be forwarded to the Owner.
- B. If this Notice is hand delivered, a duplicate copy of each Notice is to be forwarded to the Owner indicating the date of delivery and if personal contact was achieved.

IV. ENVIRONMENTAL STIPULATIONS

- 4.1 Any cost associated with violations of the law including, but not limited to, remediations, clean up cost, fines, administrative or civil penalties or charges, and third party claims imposed on the Owner by any regulatory agency or by any third party as a result of the Contractor's noncompliance with federal, state, or local environmental laws and regulations or nuisance statutes by the Contractor or by Subcontractors, consultants, sub-consultants, or any other persons, corporations or legal entities retained by the Contractor for this Agreement, shall be paid by the Contractor.

No separate payment will be made for the Work or precautions described herein except where provided for as a specific item in the Agreement or except where provision has been made for such payment in these specifications.

4.2 Pollution:

A. Water

The Contractor must comply with Section 531 – Contaminated Groundwater Management, and shall exercise every reasonable precaution throughout the duration of the project to prevent pollution of rivers, streams, and impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage, paints, sedimentation, and other harmful material shall not be discharged into or alongside rivers, streams, or impoundments or into channels leading to them.

Construction discharge water shall be filtered to remove deleterious materials prior to discharge into state waters. During specified spawning seasons, discharges and construction activities in spawning areas of state waters shall be restricted so as not to disturb or inhibit aquatic species that are indigenous to the waters. Neither water nor other effluence shall be discharged onto wetlands or breeding or nesting areas of migratory waterfowl. When used extensively in wetlands, heavy equipment shall be placed on mats. Temporary construction fills and mats in wetlands and flood plains shall be constructed of approved non-erodible materials and shall be removed by the Contractor to natural ground when the Owner so directs.

If the Contractor dumps, discharges, or spills any oil or chemical that reaches or has the potential to reach a waterway, he shall immediately notify all appropriate jurisdictional state and federal agencies and shall take immediate actions to contain, remove, and properly dispose of the oil or chemical.

Excavation material shall be disposed of in approved areas above the mean high water mark shown on the plans in a manner that will prevent the return of solid or suspended materials to state waters. If the mark is not shown on the plans, the mean high water mark shall be considered the elevation of the top of stream banks.

1. All waste materials, including but not limited to excavated materials, demolished pavement, arboreal (landscaping) waste and other debris, that are not suitable for project related purposes (e.g. backfill) or are surplus to the needs of the project, both as determined by the Owner, shall become the property of the Contractor. The Contractor shall legally dispose of all such material in accordance with his accepted Disposal Plan at no additional cost to the Owner.
2. The Contractor shall submit a Disposal Plan for review and acceptance by the Owner

prior to performing any Work that might generate waste materials. The plan shall include a complete description of the materials that are expected to be encountered and their proposed disposal site(s). The Contractor may change his Disposal Plan only by written notice to the Owner. The acceptance of a plan and/or any related notice to the Owner must be evidenced by a written response from the Owner.

3. The Contractor shall insure that all permits related to his disposal operations have been obtained, and the Contractor shall comply with all requirements of those permits. The Contractor shall show evidence that all required permits have been obtained for all disposal sites by submitting a copy of all such permits to the Owner as part of the Contractor's Disposal Plan.

Construction operations in rivers, streams, or impoundments shall be restricted to those areas where channel changes are shown on the plans and to those that shall be entered for the construction of structures. Rivers, streams, and impoundments shall be cleared of false-work, piling, debris, or other obstructions placed therein or caused by construction operations.

The Contractor shall prevent stream constriction that would reduce stream flows below the minimum, as defined by the State Water Control Board, during construction operations.

If it is necessary to relocate an existing stream or drainage facility temporarily to facilitate construction, the Contractor shall design and provide temporary channels or culverts of adequate size to carry the normal flow of the stream or drainage facility. The Contractor shall submit a temporary relocation design to the Owner for review and acceptance in sufficient time to allow for discussion and correction prior to beginning the work the design covers. Costs for the temporary relocation of the stream or drainage facility shall be included in the Contract Price for the related pipe or box culvert.

When a live watercourse must be crossed by construction vehicles more than twice in any six month period, a temporary vehicular stream crossing constructed of non-erodible material shall be provided.

Contractor shall comply with all provisions of the latest edition of the Virginia Erosion and Sedimentation Control Handbook.

B. Air

The Contractor shall comply with the provisions of the State Air Pollution Control Law and Rules of the State Air Pollution Control Board, including notifications required therein.

Burning shall be performed in accordance with applicable local laws and ordinances and under the constant surveillance of watchpersons. Care shall be taken so that the burning of materials does not destroy or damage property or cause excessive air pollution. The Contractor shall not burn rubber tires, asphalt, used crankcase oil, or other materials that produce dense smoke. Burning shall not be initiated when atmospheric conditions are such that smoke will create a hazard to the motoring public or airport operations. Provisions shall be made for flagging vehicular traffic if visibility is obstructed or impaired by smoke. At no time shall a fire be left unattended.

Asphalt mixing plants shall be designed, equipped, and operated so that the amount and quality of air pollutants emitted will conform to the Rules of the State Air Pollution Control

Board.

Emission standards for asbestos incorporated in the EPA's National Emission Standards for Hazardous Air Pollutants apply to the demolition or renovation of any institutional, commercial, or industrial building, structure, facility, installation, or portion thereof that contains friable asbestos.

C. Noise

The Contractor's operations shall be performed so that exterior noise levels measured during a noise-sensitive operation shall not be more than 80 decibels within 100 feet from the point of origin or within ten (10) feet of a noise-sensitive facility. Noise-sensitive facility is any facility for which lowered noise levels are essential if the facility is to serve its intended purpose. Such facilities include, but are not limited to, those associated with residences, hospitals, nursing homes, churches, schools, libraries, parks and recreational areas.

The Owner may monitor construction-related noise. If construction noise levels exceed the specified limits, the Contractor shall take corrective action before proceeding with operations. The Contractor shall be responsible for costs associated with the abatement of construction noise and the delay of operations attributable to noncompliance with these requirements.

The Owner may prohibit or restrict to certain portions of the project any work that produces objectionable noise between 9 P.M. and 7 A.M. If other hours are established by local ordinance, the local ordinance shall govern.

Equipment shall in no way be altered so as to result in noise levels that are greater than those produced by the original equipment.

When feasible, the Contractor shall establish haul routes that direct his vehicles away from developed areas and ensure that noise from hauling operations is kept to a minimum.

These requirements are not applicable if the noise produced by sources other than the Contractor's operation at the point of reception is greater than the noise from the Contractor's operation at the same point.

D. Forest Fires

The Contractor shall take all reasonable precautions to prevent and suppress forest fires in any area involved in construction operations or occupied by him as a result of such operations. The Contractor shall cooperate with the proper authorities of the state and federal governments in reporting, preventing, and suppressing forest fires. Labor, tools, or equipment furnished by the Contractor upon the order of any forest official issued under authority granted the official by law shall not be considered a part of the Contract. For fires originating by no fault of the Contractor, the Contractor may negotiate with the proper forest official for compensation for such labor, tools, or equipment.

4.3 Archeological, Paleontological, and Rare Mineralogical Findings:

In the event of the discovery of prehistoric ruins, Indian or early settler sites, burial grounds, skeletal remains, relics, artifacts, fossils, stone tools, meteorites, or other articles of archeological, paleontological, or rare mineralogical interest during the prosecution of work, the Contractor shall act

immediately to suspend work at the site of the discovery and notify the Owner. The Owner will immediately notify the proper state authority charged with the responsibility of investigating and evaluating such finds. The Contractor shall cooperate and, upon request by the Owner, assist in protecting, mapping, and removing the findings. Findings shall become the property of the Owner unless they are located on federal lands, in which event they shall become the property of the U.S. government.

When such work delays the progress of the Work, the Owner will give consideration to adjustments in the Contract Time limit. However, no adjustment in Contract Price nor Time will be allowed for delays that do not exceed 2 working days from the time the Contractor is notified to stop work.

4.4 Siltation and Erosion Control/Erosion & Sediment Bond:

Each Bidder shall submit a letter of certification from their surety that an Erosion and Sediment Control Surety Bond in the amount indicated in Section 102 – Invitation for Bids, will be issued if the Bidder is awarded the contract. Excavation shall be done in such a manner that there are no violations of the State of Virginia “Erosion and Sediment Control Handbook.”

V. TEMPORARY FACILITIES

- 5.1 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of employees as may be necessary to comply with the requirements of any governing body and regulatory agency having jurisdiction.
- 5.2 The Contractor shall pay for and furnish temporary facilities (such as light, power, and water) complete with connecting piping, wiring, lamps, and similar equipment as necessary. The Contractor shall install, maintain, and remove temporary facilities upon completion of the Work. The Contractor shall obtain all permits and bear all costs in connection with temporary facilities at no expense to the Owner. The use of temporary facilities shall be in compliance with the requirements of the facility owner.
- 5.3 The Contractor shall provide at least one self-contained single-occupant toilet unit of the chemical, or aerated recirculation type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Unit shall be emptied and serviced regularly

VI. EMERGENCIES

- 6.1 In emergencies affecting the safety of persons, or the Work, or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Owner, shall act to prevent threatened damage, injury or loss. The Contractor shall give the Owner prompt Written Notice of any significant changes in the Work or deviations from the Contract Documents caused thereby. Any compensation, claimed by the Contractor on account of emergency work, shall be determined by agreement between the Owner and the Contractor, and a Change Order shall be issued to document the changes.

VII. WARRANTY AND GUARANTEE

- 7.1 The Contractor shall warrant and guarantee to the Owner that all Work is in accordance with the Contract Documents and is not defective. Prompt notice of all defects shall be given to the Contractor. The Contractor shall promptly correct all defective Work performed and replace defective materials or items found deficient during the final inspection, in a manner satisfactory and at no additional cost to the Owner for a period of one (1) year following the date of Substantial

Completion; provided, however, if the local ordinances or code regarding warranties and guarantees, or if any provision in the local ordinances or code regarding the timing of performance or defect bonds conflicts with such one (1) year period, the local ordinance or code shall control. This warranty and guarantee shall not operate as a waiver of any of the rights and remedies of the Owner for default under or breach of the Agreement which rights and remedies may be exercised at any time within the period of any applicable statute of limitations.

- 7.2 Where defective Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this Article, the correction period hereunder with respect to such Work will be extended for an additional period of one (1) year after such corrections or removal and replacement has been satisfactorily completed. Repetitive malfunction of an equipment or product item shall be cause for replacement and an extension of the correction period to a date one (1) year following acceptable replacement. A repetitive malfunction shall be defined as the third failure of an equipment or product item following original acceptance.
- 7.3 If the Contractor does not promptly correct the defective Work or replace defective materials, the Owner may have the defective Work corrected or the rejected Work removed and replaced, and all costs of such removal and replacement shall be paid by the Contractor.
- 7.4 Certain equipment or items may be required in the Contract Documents to be warranted for periods longer than one year.
- 7.5 In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Contract Documents or by Change Order.

VIII. OPENING SECTIONS OF PROJECTS TO TRAFFIC

- 8.1 When specified in the Contract or when directed by the Owner, certain sections of the Work may be opened to traffic.
- 8.2 On any section of the Work opened by order of the Owner where the Contract Documents do not provide for traffic to be carried through the Work and the Contractor has not been dilatory in prosecuting the Work, the Contractor will not be required to assume any expense entailed in maintaining the road for traffic. Such expense will be borne by the Owner or will be compensated for by Change Order. Repair of slides and repair of damage attributable to traffic will be compensated for by Change Order. The cost of all other repairs shall be borne by the Contractor.
- 8.3 On any section of the Work opened by the order of the Owner where the Contract Documents do not provide for traffic to be carried through the Work, any additional cost for the completion of other items of Work that are occasioned because of the changed working conditions will be compensated by Change Order.
- 8.4 If the Contractor is dilatory in completing the Work, he shall not be relieved of the responsibility for maintenance during the period the section is opened to traffic prior to final acceptance. Any expense resulting from the opening of such portions under these circumstances, except for slides, shall be borne by the Contractor. The Contractor shall conduct the remainder of the construction operations so as to cause the least obstruction to traffic.

IX. NO WAIVER OF LEGAL RIGHTS

- 9.1 The Owner shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after final acceptance of the Work and payment therefor from showing (1) the true amount and character of the Work performed and materials furnished by the Contractor, (2) that any such measurement, estimate, or certificate is untrue or incorrectly made, or (3) that the Work or materials do not conform with the provisions of the Contract. The Owner shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate, and payment in accordance therewith, from recovering from the Contractor or his surety, or both, such damage as it may sustain by reason of his failure to comply with the terms of the Contract. Neither the acceptance by the Owner or any representative of the Owner, nor any payment for or acceptance of the whole or any part of the Work, nor any extension of time, nor any possession taken by the Owner shall operate as a waiver of any portion of the Contract or of any power herein reserved or of any right to damages. A waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach. The Owner reserves all rights, privileges, immunities and defenses available to it at law.

End of Section

SECTION 108

PROSECUTION AND PROGRESS OF WORK

I. PATENT FEES AND ROYALTIES

- 1.1 The Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others
- 1.2 To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner, the Engineer, the Engineer's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents.

II. TAXES

- 2.1 The Contractor shall pay all sales, consumer, use and other similar taxes required to be paid by the Contractor in accordance with the Laws and Regulations of the Project that are applicable during the performance of the Work. (The Contractor may apply to the Virginia Department of Environmental Quality for tax exempt status for certain wastewater products.)

III. NOTICE TO PROCEED

- 3.1 Written Notice to Proceed will be given after the Agreement has been executed and the required Bid Security and insurances have been filed with and approved by the Owner.
- 3.2 The Contractor shall notify the Owner and all other governing bodies having jurisdiction, of the time and location that Work will begin at least 48 hours prior to beginning Work.

IV. PRE-CONSTRUCTION CONFERENCE

- 4.1 Within ten (10) Days of the Effective Date of the Agreement, a conference attended by the Contractor, the Owner, and others as appropriate will be held to discuss the Project, and to discuss procedures relating to Shop Drawings, submittals, Applications for Payment, and other Project issues, and to establish a working relationship among the parties as to the Work.

V. CONSTRUCTION PROGRESS SCHEDULE

- 5.1 Within ten (10) Days after the Effective Date of the Agreement, the Contractor shall submit a written schedule to the Owner showing the proposed order of Work and indicating the time required for completion of major items of Work. This schedule shall take into account the passage or handling of traffic with the least practicable interference and the orderly, timely and efficient prosecution of the Work. The schedule will be used as an indication of the sequence of the major construction operations and as a check on the progress of the Work.

- A. A construction schedule in the form of a critical path shall be submitted to the Owner as part of the submittal process prior to beginning construction and shall be updated when duration or sequencing changes.
 - B. The Owner reserves the right to audit all reports and schedules. For cost-reimbursement contracts, change orders issued for fixed priced contracts or other contracts in excess of \$10,000, which include the provisions of services, the Contractor shall retain all books, records and other documents relative to this contract for five (5) years after final payment or until audited by the Owner or designee, whichever is sooner. The Owner and its authorized agents shall have full access to and the right to examine and duplicate any of said materials during said period.
- 5.2 The Contractor shall update the progress schedule monthly to reflect any schedule changes required to complete the remaining Work in accordance with the requirements of the Contract Documents. The updated schedule shall be submitted to the Owner for acceptance with the monthly application for progress payment; no payment will be made if the updated schedule is not submitted. All proposed adjustments in the progress schedule shall generally conform to the progress schedule then in effect and will comply with any provisions of the general requirements applicable thereto.

VI. SUBCONTRACTS

- 6.1 Except as otherwise noted, contract Work, the cost of which is at least fifty percent (50%) of the total Contract Price shall be performed by the Contractor's own organization.
- 6.2 No part of the Work shall be transferred or subcontracted without prior written consent of the Owner, and no such consent or approval shall release the Contractor from any obligations to the Owner or persons employed by the Subcontractors, or to those supplying materials to the Subcontractors.
- 6.3 The Contractor agrees that it is as fully responsible to the Owner for the acts and omissions of its Subcontractors and persons either directly or indirectly employed by the Subcontractors as it is for the acts or omissions of persons directly employed.
- 6.4 Nothing contained in the Agreement shall create any contractual relation between any Subcontractor and the Owner.

VII. COMMENCEMENT AND PROSECUTION OF WORK

- 7.1 The Contractor shall commence Work within ten (10) Days of the date specified in the Notice to Proceed. Time being of the essence of this Project, the Contractor shall prosecute the Work diligently, using such means and methods of construction as will secure its full completion within the time period specified in the Agreement. No Work shall be done at the site prior to the date specified in the Notice to Proceed.
- 7.2 The Contractor shall proceed with the Work at such rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time for the completion of the Work as specified in the Agreement is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Project.
- 7.3 The Contract Time will commence on the date indicated in the Notice to Proceed.

- 7.4 Once the Contractor has commenced Work, it shall be prosecuted continuously and to the fullest extent possible except for interruptions caused by delays authorized or ordered by the Owner by a Change Order or by weather.

Contractor agrees that it will make no claim for increased Contract Price or extended Contract Time arising from delay except by request for a Change Order as set forth below. The Contract Time may be extended and/or Contract Price may be increased by Change Order if the Owner determines that:

- A. the Contractor is delayed in the progress of Work by any act or omission of the Owner or the Engineer, or by any separate contractor employed by the Owner, or by strikes, lockouts, fire, adverse weather conditions not reasonably anticipated, or acts of nature;
 - B. such delay affects the overall completion of the Work;
 - C. the Contractor gives written Notice to the Owner within 48 hours of the start of the occurrence, stating the cause of the potential delay and estimate of the possible Contract Time extension involved; and
 - D. the Contractor gives written Notice to the Owner of any actual Contract Time extension and/or Contract Price increase requested as a result of the aforementioned occurrences within 10 days after the delay has been remedied.
- 7.5 Gifts, gratuities, or favors shall not be given or offered by the Contractor to personnel of the Owner.
- 7.6 The Contractor shall not employ any personnel of the Owner or the Engineer for any services without the prior written consent of the Owner.
- 7.7 Workers shall have sufficient skill and experience to perform properly the Work assigned to them. Workers engaged in special or skilled Work shall have sufficient experience in such Work and in the operation of equipment required to perform it properly and satisfactorily. Any person employed by the Contractor or any Subcontractor who, in the opinion of the Owner, does not perform his Work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Owner, be removed forthwith by the Contractor or Subcontractor employing the person and shall not be employed again on any portion of the Work without the approval of the Owner.
- 7.8 Equipment shall be of sufficient size and in such mechanical condition as to meet the requirements of the Work and produce a satisfactory quality of Work. Equipment and the Contractor's methods and means shall be such that no damage to the roadway, adjacent property, or other highways will result from its use. The Owner may order the removal and require replacement of unsatisfactory equipment.

VIII. SUSPENSION OF WORK

- 8.1 The Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than 90 Days or such further time as agreed upon by the Contractor, by Written Notice to the Contractor. Such Notice shall specify the date on which Work shall be resumed and the Contractor shall resume the Work on the date so specified. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if the Contractor makes a claim in accordance with the Contract Documents, except that no such increase or extension shall be allowed if the suspension was due to a failure by the Contractor to perform the Work in accordance with the Agreement.

- 8.2 The Owner may decline to approve or, because of subsequently discovered evidence, nullify the whole or part of any Application for Payment to such extent as may be necessary to protect the Owner from loss on account of:
- A. Defective Work not remedied;
 - B. Claims filed or reasonable evidence indicating probable filing of claims against the Contractor;
 - C. Failure of the Contractor to make payments properly to subcontractors or for materials or labor;
 - D. A reasonable doubt that the Contract can be completed for the balance then unpaid;
 - E. Failure to maintain (each month) the record set of drawings and specifications, or a failure to provide the Owner record drawings and specifications within 30 calendar days from the date of the Certificate of Substantial Completion;
 - F. Failure to periodically remove and dispose of accumulated debris, rubbish, and discarded/damaged materials;
 - G. Persistent failure to carry out the Work in accordance with the Contract Documents;
 - H. A reasonable doubt that the Work will be completed within the Contract Time.
- 8.3 When the above grounds are resolved to the satisfaction of the Owner, payment shall be made for amounts withheld therefore.

IX. TERMINATION OF AGREEMENT

9.1 Termination for the Convenience of the Owner

The performance of Work under this Agreement may be terminated by the Owner in accordance with this section in whole, or in part(s), whenever the Owner shall determine that such termination is in the best interest of the Owner. Any such termination shall be effected by delivery to the Contractor of a notice of termination specifying the extent to which performance of Work under the Agreement is terminated, and the date upon which such termination becomes effective.

After receipt of a notice of termination, and except as otherwise directed by the Owner, the Contractor shall:

- A. Stop Work under the Agreement on the date and to the extent specified in the notice of termination.
- B. Place no further orders or subcontracts for materials, services, or facilities, except as may be necessary for completion of such portion of the Work under the Agreement that is not terminated.
- C. Terminate all orders and subcontracts to the extent that they relate to the performance of the Work terminated by the notice of termination.

- D. Assign to the Owner, and as directed by the Owner, all of the right, title and interest of the Contractor under the orders and subcontracts so terminated. The Owner shall have the right and discretion to settle or pay any and all claims arising out of the termination of such orders and subcontracts.
- E. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner. This approval or ratification will be final for all purposes of this section.
- F. Complete performance of that Work which was not terminated by the Owner.
- G. Take such action as may be necessary, or as the Owner may direct, for the protection and preservation of the property related to this Agreement which is in the possession of the Contractor and in which the Owner has, or may acquire, an interest.
- H. Within 30 Days after the receipt of the Notice of termination, the Contractor may submit a list to the Owner for approval, certified as to quantity and quality of any or all items of, inventory not previously disposed of, exclusive of items, the disposition of which has been directed or authorized by the Owner, and may request the Owner to remove such approved items or enter into a storage agreement covering the same. Not later than 15 Days thereafter, the Owner will accept title to such approved items and remove them or enter into a storage agreement covering same. The list submitted shall be subject to final verification by the Owner upon removal of the items, or if the items were stored within 45 Days from the date of submission of the list. Any necessary adjustment to correct the list as submitted shall be made prior to final settlement.
- I. Within 30 Days after receipt of the notice of termination, the Contractor shall submit to the Owner his termination claim. Such claim shall be submitted in writing. Upon failure of the Contractor to submit its termination claim within the time allowed, the Owner may, at its discretion, reject such termination claim. Such termination claim shall include the cost of the following:
 - 1. The cost of supplies accepted by the Owner and not previously paid for by the Owner, appropriately adjusted for any saving of freight or other charges.
 - 2. The cost incurred in the performance of the Work terminated, including Initial cost and preparatory expense allocable thereto, but exclusive of any cost attributable to supplies paid or to be paid for by the Owner.
 - 3. The cost of settling and paying claims arising out of the termination of Work under subcontracts or orders which are properly chargeable to the terminated portion of the Agreement, exclusive of amounts paid or payable on account of supplies or materials delivered or services furnished by Subcontractors or vendors prior to the effective date of notice of termination and previously paid for by the Owner.
 - 4. A reasonable amount of profit or commission, which will be determined based on the Project's specific overhead and expense data at the rate computed in the original Contract Price or, at the discretion of the Owner, as determined by an audit. The cost of the audit will be borne by the Contractor.

5. Cost of reasonable storage, transportation and other costs incurred in connection with the protection or disposition of property allocable to this termination portion of the Agreement.
6. The total sum to be paid to the Contractor shall not exceed the Contract Price as reduced by the amount of payments previously made and its further reduced by the Contract Price of Work not terminated. Said total sum shall also be reduced by the reasonable value, as determined by the Owner, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Owner or to a buyer.

9.2 Termination with Cause/Default

In the event that the Contractor shall for any reason or through any cause be in default of the terms of this Agreement, the Owner may give the Contractor written Notice of such default by certified mail/return receipt requested at the address set forth herein.

Unless otherwise provided, Contractor shall have ten (10) Days from the date such notice is mailed in which to cure the default. Upon failure of the Contractor to cure the default, the Owner may immediately cancel and terminate this Agreement as of the mailing date of the default notice.

Upon termination, the Contractor shall withdraw its personnel and equipment, cease performance of any further Work under this Agreement, and turn over to the Owner any Work in process for which payment has been made.

In the event of violations of law, safety or health standards and regulations, this Agreement may be immediately canceled and terminated by the Owner and provisions herein with respect to opportunity to cure default shall not be applicable.

9.3 Contractor's Right to Terminate the Agreement

Should the Work be stopped for a period of 90 Days or more, through no fault of the Contractor, or should the Owner fail to pay the Contractor any payment within a reasonable length of time after said payment shall become due, the Contractor may, upon seven (7) Days written notice to the Owner, stop Work, or terminate the Agreement and recover from the Owner payment for all Work executed, plus any loss actually sustained, plus reasonable profit and damage; provided, however, the total recovery from Owner shall not exceed the Contract Price.

X. LIQUIDATED DAMAGES

- 10.1 It is mutually understood and agreed by and between the Contractor and Owner that in the execution of the Work, time is an essential element of the Agreement, and it is important that the Work proceed vigorously to completion.
- 10.2 The Owner has the right to deduct any liquidated damages from any money in the Owner's hands, otherwise due, or to become due, to the Contractor, and to sue for and recover any additional compensation for damages for non-performance of the Work or failure to complete the Work within the Contract Time.
- 10.3 The assessment of liquidated damages for failure to complete the Work within the Contract Time shall not constitute a waiver of the Owner's right to collect any additional damages that the Owner may sustain by failure of the Contractor to carry out the terms of the Agreement.

10.4 In the event of delay in the completion of the Work as specified beyond the Completion Date as adjusted by Change Orders, it would be difficult to determine the exact amount of the loss or damages suffered by the Owner due to delays in completion of the Agreement. Therefore, for every - Day of delay past Completion Date of this Agreement as adjusted by Change Orders, the Contractor and the Contractor's Surety will be liable to the Owner, as liquidated damages for delay and not as a penalty, in the sum designated in Section 102, III. Bid Form, and in paragraph H of the Agreement between Contractor and Owner as set forth in Section 103, for each and every calendar Day the Contractor shall be in default, as follows:

- A. If Substantial Completion has not been achieved by the scheduled Substantial Completion date, the Substantial Completion liquidated damages shall accrue each Day until Substantial Completion is achieved.
- B. If Substantial Completion has been achieved but Final Completion has not been achieved by the Final Completion date, Final Completion liquidated damages shall accrue each Day until Final Completion is achieved.
- C. If Substantial Completion is not achieved by the time of Final Completion then liquidated damages for both Substantial and Final Completion shall run concurrently until Substantial Completion is achieved.
- D. The scheduled Final Completion date shall not be extended, in any case, solely because Substantial Completion was not achieved by the scheduled Substantial Completion date.
- E. This paragraph will not apply to delays in completion of the Work due to acts of God, acts of the Public Enemy, acts of the Government (in either its sovereign or contractual capacity), fires, floods, strikes, or unusually severe weather, provided, that the Contractor shall, within five (5) Days from the end of the month in which such delay occurred, notify the Owner in writing of the causes of delay and the facts relating thereto; and, provided that such delay occurs prior to the Substantial Completion date or, if Substantial Completion has been achieved, such delay occurs prior to the Final Completion date. Failure to provide such notice shall preclude the Contractor from claiming that delays resulted from the acts of God, acts of the Public Enemy, acts of the Government (in either its sovereign or contractual capacity), fires, floods, strikes, or unusually severe weather.
- F. Nothing in the above clause shall be interpreted as limiting in any way, the Owner's right to proceed against the Contractor for additional damages or losses. Liquidated damages are for delay only and are in addition to any other rights available to the Owner by contract or law. To the fullest extent permitted by Laws and Regulations, the Contractor shall waive any defense as to the validity of such liquidated damages as set forth herein on the grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages.

10.5 Weather shall be considered "unusually severe", only if a weather condition (or any combination of weather conditions) prevents the Contractor from working a number of workdays during a calendar month, which number exceeds the number of workdays listed below for that calendar month. Delays will only be allowed for the amount of lost workdays in excess of the following:

January	6	July	4
February	4	August	3
March	4	September	3

April	3	October	3
May	4	November	3
June	4	December	5

- 10.6 The Contractor shall anticipate the potential loss of the number of workdays listed above for each calendar month due to weather, and shall schedule the Work accordingly. Any schedules submitted shall include the above number of days each month as lost days. The Owner shall determine, upon examination of submitted evidence, whether or not weather prevented the Contractor from performing Work on the days claimed by the Contractor. The Owner's determination shall be final and binding upon the parties.
- 10.7 The Work shall be considered complete when the following criteria have been met; all items of the Work have been constructed, inspected and accepted by the Owner and further that all punch list items have been corrected and the Owner has issued a letter of acceptance.

XI. SEPARATE CONTRACTS BY OWNER

- 11.1 The Owner reserves the right to award other contracts in connection with the Project, the work under which may proceed simultaneously with the execution of this Agreement. The Contractor shall afford other separate Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and the Contractor shall take all reasonable action to coordinate its Work with theirs. If the work performed by the separate Contractor is defective or so performed as to prevent the Contractor from performing the Work, the Contractor shall immediately notify the Owner upon discovering such conditions. Upon receiving notification, the Owner shall take such appropriate steps as are necessary to allow the Contractor to perform Work under the Agreement, and appropriate extensions of time and change orders will be given to the Contractor, pursuant to the Agreement, to compensate for any delays and extra costs caused by separate Contractor's performance.

XII. INDEMNIFICATION

- 12.1 To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner, the Engineer, the Engineer's Consultants and officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including, but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act, errors, omissions, recklessness, or intentionally wrongful conduct of the Contractor, any Subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by a person or entity indemnified hereunder. This paragraph shall not require indemnification for a particular claim, cost, loss, or damage to the extent caused by or resulting solely from the negligence of the Owner, its agents, or employees.
- 12.2 In any and all claims against the Owner or any of the Owner's consultants, agents, officers, directors, or employees by any employee (or the survivor or personal representative of such employee) of the Contractor, any Subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation

on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any such Subcontractor, supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

- 12.3 The indemnification obligations of the Contractor shall not extend to the damages caused by the Owner and the Owner's consultants, officers, directors, employees or agents resulting from the negligent preparation or approval of, Drawings, or Specifications.

End of Section

SECTION 109

MEASUREMENT AND PAYMENT

I. MEASUREMENT AND PAYMENT PROCEDURES

1.1 General

- A. Measurement will be made on the basis of completion of the Work in accordance with the Contract Documents and the appropriate specification section.
- B. Measurement of quantities will be made by the Contractor in the presence of the Owner. The methods of measurement and computations used in determination of quantities of materials furnished and installed shall be those generally recognized as conforming to good engineering practice.
- C. The term "Complete in Place" will mean that the item of Work shall be furnished and installed in accordance with the Contract Documents complete with all appurtenances necessary for the item to be used for its intended function. Testing and acceptable results shall be included.
- D. Linear foot and vertical foot measurements shall be measured along the horizontal plane of the ground or paved surface.
- E. Area computations shall be made on the surface. Pay measurements for area computations will not exceed plan dimensions as shown on the Drawings, unless otherwise approved by the Owner in writing.
- F. No payment will be made for length, width, or depth, in excess of that shown on the Drawings or specified in the Specifications for any construction, unless otherwise approved by the Owner in writing.
- G. The term "Each" when used as an item of payment will mean complete payment for the Work described in the Contract Documents.
- H. The word "Lump Sum" when used as an item of payment will mean complete payment for Work described in the item, including all materials, labor, and equipment necessary to complete the Work in accordance with the Contract Documents.
- I. Quantities will be measured and paid for in accordance with one of the following methods, and as specified on the Bid form

1.2 Incidental Items

- A. There are numerous incidental items of Work that are required to complete the Project. While these items may not be specifically mentioned or illustrated by the Contract Documents and there may be no specific pay items listed for them, the Contractor will be required to perform those incidental tasks that can be anticipated through inspection of the Contract Documents, inspection of the construction area, and experience in this class of construction.

- B. Items considered incidental Work shall not be measured for payment or paid for as such unless specified as unit price by items on the Bid form. These items and their costs shall be included in the unit prices or lump sum Bid for the pay items unless Bid separately. Incidental items include but are not limited to the following:

1. Allaying dust and mud
2. Clearing and grubbing
3. Construction entrances
4. Contaminated groundwater management
5. Daily cleanup
6. Drainage feature restoration including culvert end-walls, swales, and paved swales
7. Excavation and dewatering
8. Final surface restoration
9. Fittings and Restrained Joints
10. Furnishing, hauling, placing, manipulating, and compacting material
11. Location of existing utilities
12. Material royalties
13. Minor relocation of buried cables, water lines, sewer lines, or similar utility lines 2 inches and smaller in diameter
14. Offsite disposal of excess excavated, surplus and remnant excavated materials
15. On-site manufacturer or representative services
16. Pavement marking
17. Permits, unless provided by the Owner
18. Protection of existing utilities and other facilities
19. Removal and replacement of existing signs, fences, mail boxes, and similar existing improvements
20. Shoulder tie-in to restored pavement
21. Site restoration and cleanup
22. Site security
23. Stakeout and surveying
24. Traffic control
25. Top soil and seeding
26. Record Drawings

1.3 Schedule of Values for Lump Sum Bid Items

- A. Within fourteen (14) Days after the Effective Date of the Agreement, the Contractor shall submit a schedule of values for all of the Work which shall include quantities and prices of items aggregating the Contract Price and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices shall include an appropriate amount of overhead and profit applicable to each item of Work.
- B. The Owner shall review the schedule and shall respond in writing to the Contractor within ten (10) Days either approving or disapproving the schedule. If the schedule of values is disapproved, the Contractor shall resubmit the schedule with revised value or additional substantiating data and the Owner shall either approve or disapprove the revised schedule

within ten (10) Days. No payments shall be processed or approved until the schedule of values is approved by the Owner.

- C. The Contractor shall include Erosion and Sedimentation Maintenance Line Item in the Schedule of Values.

1.4 Application for Progress Payment by Contractor

- A. Unless otherwise provided in this Section, the Owner shall make monthly progress payments to the Contractor on the basis of a duly certified and approved Application for Payment for Work performed during the preceding calendar month as approved by the Owner.
- B. At least ten (10) Days before each partial progress payment (but not more often than once a month), the Contractor shall submit to the Owner an Application for Payment filled out and signed by the Contractor for the Work completed during the period covered by the partial progress payment estimate and supported by such data as is required by the Contract Documents.
- C. The schedule of values for lump sum items established as provided in Section 109-1.2 shall serve as the basis for progress payments and shall be incorporated into a form of Application for Payment acceptable to the Owner.
- D. Up to date Record Drawings, as described in Section 105.V, shall be submitted with monthly invoices.

1.5 Payment for Material on Hand

If payment is requested on the basis of materials and equipment not incorporated in the Work, but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall be accompanied by a bill of sale, invoice or other instrument documenting that the materials and equipment are free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance, all of which will be satisfactory to the Owner. The Owner, at its sole discretion, may not pay for stored materials without prejudice and without cause.

1.6 Review of Applications for Progress Payments

- A. The Owner shall, within ten (10) Days after receipt of each Application for Payment, make such investigations as deemed necessary to verify the accuracy of the Application for Payment and either accept the application as accurate and suitable for payment or return the Application to the Contractor indicating in writing the Owner's reasons for refusing payment. If payment is refused, the Contractor shall make the necessary corrections and resubmit the Application and the Owner shall have an additional ten (10) Days after receipt of the corrected Application for Payment from the Contractor to determine whether this Application is accurate and suitable for payment.
- B. The Owner shall, within 30 Days after acceptance of the Application for Payment, make payment to the Contractor. The Owner may refuse to make payment of the full amount because claims have been made against the Owner on account of the Contractor's performance or furnishing of the Work, or because Liens have been filed in connection with the Work, or because there are other claims entitling the Owner to a set-off against the payment. The Owner shall give the Contractor immediate written Notice stating the reasons for its failure to make payment.

- C. The Owner may also refuse to make payment of the full amount because there are other items entitling the Owner to retain set-offs from the amount recommended, including but not limited to:
1. Owner compensation to the Engineer for actual costs for extra personnel hours for labor plus expenses because of the following Contractor caused events:
 - a. Witnessing re-testing of corrected or replaced defective Work.
 - b. Return visits to manufacturing facilities to witness factory testing or re-testing.
 - c. Evaluation of proposed substitutes and in making changes to Contract Documents occasioned thereby.
 - d. Overtime worked by the Contractor necessitating the Engineer, Resident Project Representative (and support staff, if any), to work overtime.
 2. Liability for liquidated damages incurred by the Contractor as set forth in the Agreement.
 3. Loss to Owner caused by Contractor acts or omissions including, but not limited to:
 - a. Defective Work not remedied;
 - b. Claims filed or reasonable evidence indicating probable filing of claims against the Contractor;
 - c. Failure of the Contractor to make payments properly to subcontractors or for materials or labor;
 - d. A reasonable doubt that the Project can be completed for the balance then unpaid;
 - e. Failure to maintain (each month) the record set of Drawings and Specifications. Failure to provide the Owner with record Drawings and Specifications within thirty (30) calendar Days from the date of the Substantial Completion;
 - f. Failure to periodically remove and dispose of accumulated debris, rubbish, and discarded/damaged materials;
 - g. Persistent failure to carry out the Work in accordance with the Contract Documents;
 - h. A reasonable doubt that the Work will be completed within the Contract Time.
 4. Failure of the Contractor to submit an updated progress schedule or other required supporting documentation (if requested by the Owner) to the Owner with the monthly application for progress payment.

1.7 Retained Funds

- A. The Owner shall retain five (5) percent (%) of the total amount of each partial progress payment to assure faithful performance of the Agreement by the Contractor. The Owner will release all retainage upon Final Payment.
- B. Pursuant to and in accordance with Section 2.2-4334 of the Code of Virginia, the Contractor may exercise the option to use the escrow account utilization procedure with respect to retained funds. The Contractor may do so by indicating its preference for this procedure in the appropriate space provided on the Bid form.
 - 1. Should this option be selected, the Contractor shall execute the Escrow Agreement and shall submit same to the Owner in the manner prescribed by law. If the Escrow Agreement form is not submitted as noted, the Contractor shall forfeit such rights to the use of the escrow account utilization procedure.
 - 2. In order to have retained funds paid to an escrow account, the Escrow Agreement shall be executed by the Contractor, the escrow agent, and the surety, and shall be submitted by the Contractor to the Owner for approval by the Owner's attorney. The Contractor's escrow agent shall be a trust company, bank or savings institution with its principal office located in the Commonwealth of Virginia. The Escrow Agreement shall contain the complete address of the escrow agent and surety, and the executed Escrow Agreement will be authority for the Owner to make payment of retained funds to the Escrow Agent. After approving the Escrow Agreement, the Owner shall pay to the escrow agent the funds retained as provided herein except that funds retained for lack of progress or other deficiencies on the part of the Contractor shall not be paid to the Escrow Agent. The Escrow Agent may, in accordance with the terms of the Escrow Agreement, invest the funds paid into the escrow account and pay earnings on such investments to the Contractor or release the funds to the Contractor provided that such funds are fully secured by approved securities.
 - 3. Retained funds invested and securities held as collateral for retainage may be released only as and when directed by the Owner. When the Final Payment is paid, the Owner shall direct to the Contractor monies due as determined by the Owner. The Owner reserves the right to recall retained funds and to release retained funds to the surety upon receipt of written request from the Contractor or in the event of default.
 - 4. The escrow account procedure shall apply to any contract for the sum of Two Hundred Thousand Dollars (\$200,000), or more, for construction of highways, roads, streets, bridges, parking lots, demolition, clearing, grading, excavating, paving, pile driving, miscellaneous drainage structures, and the installation of water, gas, sewer lines, and pumping stations.

1.8 Conditions of Payment to Contractor

- A. All material and Work covered by partial progress payments shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the safety and protection of all materials and Work upon which payments have been made or the restoration or replacement of any damaged or stolen

Work or property or as a waiver of the right of the Owner to require the fulfillment of all the terms of the Agreement

- B. Prior to Substantial Completion, the Owner, with the concurrence of the Contractor, may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.
- C. The Owner shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work, or the restoration of any damaged Work except such as may be caused by agents or employees of the Owner.
- D. The Contractor shall indemnify and save the Owner or the Owner's agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools and all supplies, incurred in the furtherance of the performance of the Work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so the Owner may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of the Contract Documents but in no event shall the provisions of this Section be construed to impose any obligations upon the Owner to either Contractor, the Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Owner shall be considered as a payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.
- E. The Contractor shall take one of the two following actions within seven (7) Days after receipt of amounts paid to the Contractor by the Owner for Work performed by the Subcontractor under the Agreement:
 - 1. Pay to the Subcontractor the proportionate share of the total payment received attributable to the Work performed by the Subcontractor under the Agreement; or
 - 2. Notify the Owner and Subcontractor, in writing, of his intention to withhold all or a part of the Subcontractor's payment with the reason for nonpayment.
- F. All contracts awarded by the Contractor to a Subcontractor for any portion of the Work shall include:
 - 1. An interest clause that obligates the Contractor to pay interest to the Subcontractor on all amounts owed by the Contractor that remain unpaid after seven (7) Days following receipt by the Contractor of payment from the Owner for Work performed by the Subcontractor under that contract, except for amounts withheld as allowed.
 - 2. An interest rate clause stating, "Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month."

3. A payment clause that requires (i) individual contractors to provide their social security numbers and (ii) proprietorships, partnerships, limited liability companies and corporations to provide their federal employer identification numbers.
- G. The Contractor shall include in each of its subcontracts a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements as specified in Section 1.7 above, with respect to each lower-tier Subcontractor.
- H. A Contractor's obligation to pay an interest charge to a Subcontractor pursuant to the payment clause in this section may not be construed to be an obligation of the Owner. A contract modification may not be made for the purpose of providing reimbursement for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

1.9 Final Payment

After the Contractor has completed all corrective Work as determined by a final inspection to the satisfaction of the Owner and has delivered all maintenance and operations manuals, schedules, guarantees, bonds, certificates of inspection, and other documents as required by the Contract Documents, the Contractor may make application for final payment following the procedure for partial progress payments. Within thirty (30) Days after approval, the Owner shall pay to the Contractor the amount stated, less all prior payments and advances to or for the account of the Contractor. All prior estimates and payments including those relating to extra Work shall be subject to correction by this payment, which is called the Final Payment. The Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or Final Payment by the Owner nor the issuance of a Certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by Owner, nor any act of acceptance by Owner nor any failure to do so, nor any correction of defective Work by Owner shall constitute an acceptance of Work not in accordance with the Contract Documents.

1.10 Acceptance of Final Payment Constitutes Release

The acceptance by the Contractor of the Final Payment shall be and operate as a release to the Owner of all claims and of all liability to the Contractor for all things done or furnished in connection with this Work excepting the Contractor's claims for interest upon Final Payment, should this payment be improperly delayed. No payment, final or otherwise, or partial or entire use or occupancy of the Work by the Owner, shall constitute an acceptance of any Work or materials not in accordance with the Contract Documents, nor shall the same relieve the Contractor of responsibility for faulty materials or workmanship or operate to release the Contractor or his Surety from any obligation under the Contract, the Performance Bond and Payment Bond.

1.11 Assignments

Neither party to the Agreement shall sell, transfer, assign or otherwise dispose of the whole or any parts of the Agreement or of the right, title or interest therein without the prior written consent of the other, nor shall the Contractor assign any monies due or to become due hereunder, without the previous written consent of the Owner.

1.12 Payment Affidavit

The Owner, before making any payment, including the final payment, if it is deemed that such

procedure necessary to protect his interests, may require the Contractor to furnish an affidavit from all subcontractors and material suppliers used in conjunction with this Contract that each has been paid in full, or in the alternative, an affidavit that so far as he has knowledge or information, all payments have been made and that there is no basis under which a claim against the payment bond could be filed. However, the Owner may make payments in part or in full to the Contractor without requiring the affidavits, and the payments so made shall not impair the obligations of any Surety or Sureties on any bond or bonds furnished under this Contract.

II. CHANGE ORDERS AND FIELD ORDERS

- 2.1 The Owner may at any time, as the need arises, order changes within the scope of the Work without invalidating the Agreement. If such changes increase or decrease the amount due under the Contract Documents, or in the time required for performance of the Work, an equitable adjustment shall be authorized by Change Order.
- 2.2 The Contract Price and Contract Time may be changed only by a Change Order, approved by the Owner prior to the performance of the Work by the Contractor or granted by the Owner upon written Notice by Contractor submitted in accordance with Section 104-5.2 and 5.3 or Section 105-16.2. The value of any Work covered by a Change Order or of any claim for increase or decrease in the Contract Price or Contract Time shall be established in accordance with the following methods in the order of precedence listed below:
 - A. Established contract unit prices;
 - B. An agreed lump sum or unit price established by direct negotiation between the Contractor and the Owner; or,
 - C. In the event that any changes in the Work are not settled under A. and B. above, the Contract Price shall be adjusted in accordance with the following:
 1. In any case such change involves extra Work which is performed by the Contractor, the Contract Price shall be increased by (a) the direct cost of such Work, as mutually agreed upon or otherwise as determined in accordance with the Contract Documents, and (b) ten percent (10%) of the amount of (a) to cover Contractor's additional job (field and home office) overhead, and (c) five percent (5%) of the sum of (a) and (b) to cover Contractor's additional job profit.
 2. In any case such change involves extra Work which is performed by a Subcontractor, the Contract Price shall be increased by (a) the amount paid by the Contractor to the Subcontractor for such extra Work, and (b) seven and one-half percent (7-1/2%) of the amount paid to the Subcontractor to cover the Contractor's additional job (field and home office) overhead and (c) five percent (5%) of the sum of (a) and (b) to cover Contractor's additional job profit. On Work performed by the Subcontractor, the Subcontractor shall be allowed overhead and profit in accordance with paragraph C (1) above.
 3. In the case of either subparagraph 1 or 2 above, the Contract Price shall also be increased by the corresponding increase in the cost of the Contractor's performance bond.
- 2.3 It is the Contractor's responsibility to notify his Surety of any change affecting the general scope of the Work or change in the Contract Price and/or Contract Time so that the amount of the applicable

- Bonds shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the Owner.
- 2.4 Whenever changes, alterations, additions, omissions, or revisions are called for by the Owner for which the necessary Drawings and details have been completed and submitted to the Contractor, or when changes, alterations, additions or omissions are clearly given in writing to the Contractor, the Contractor is to submit an itemized statement of quantities and prices incidental to such revisions, changes, additions and omissions.
- 2.5 The Owner may at any time order minor changes within the scope of Work by issuing a Field Order. The Contractor shall proceed with the performance of any changes in the Work so ordered by the Owner unless the Contractor believes that such Field Order entitles the Contractor to a change in Contract Price or Time or both, in which event the Contractor shall give the Owner written Notice thereof within seven (7) Days after the receipt of the ordered change. The Contractor shall not execute such changes pending the receipt of an executed Change Order or further instruction from the Owner. The Owner shall respond to such written Notice from Contractor within twenty-one (21) days after receipt of all supporting data from Contractor in accordance with Section 105.16.2
- 2.6 If any item in the Agreement is determined to be unnecessary for the proper completion of the Work contracted, the Owner may, upon written Notice to the Contractor, eliminate such item from the Agreement. Payment will not be made for such item except that the Contractor shall be compensated for the actual cost of any Work performed for the installation of such item and the net cost of materials purchased, including freight and tax costs, as evidenced by invoice. No additional compensation will be made for overhead or anticipated profit.
- 2.7 The Contractor shall not be entitled to any adjustment in the Contract Price or Contract Time due to any condition or alleged condition if:
- A. The Contractor knew of the existence of such conditions at the time the Contractor made a final commitment to the Owner in respect of Contract Price and Contract Time by the submission of a Bid; or
 - B. The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Contract Documents to be conducted by or for the Contractor prior to the Contractor making such final commitment; or
 - C. The Contractor failed to give the written Notice within the time and as required by Section 104-5.2 and 5.3, Section 105-16.2 or Section 108.7.4.

CHANGE ORDER

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract _____

PROJECT _____

OWNER'S Contract No. _____ ENGINEER'S Contract No. _____

ENGINEER _____

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:
Original Contract Price \$ _____
Net Increase (Decrease) from previous Change Orders No. _____ to _____: \$ _____
Contract Price prior to this Change Order: \$ _____
Net increase (decrease) of this Change Order: \$ _____
Contract Price with all approved Change Orders: \$ _____

CHANGE IN CONTRACT TIMES:
Original Contract Times: Final Completion: _____ (Days or dates)
Net change from previous Change Orders No. _____ to No. _____ Final Completion: _____ (Days)
Contract Times prior to this Change Order: Final Completion: _____ (Days or dates)
Net increase (decrease) of this Change Order: Final Completion: _____ (Days)
Contract Times with all approved Change Orders: Final Completion: _____ (Days or dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____
ENGINEER(Authorized Signature)

By: _____
OWNER(Authorized Signature)

By: _____
CONTRACTOR(Authorized Signature)

Date: _____

Date: _____

Date: _____

III. APPLICATION FOR PAYMENT

PROJECT SUMMARY

Date: _____ Contractor's Name: _____

Project Name: _____ Project Number: _____

Original Contract Amount: \$ _____
Original Contract Time: _____ Days
Adjusted Contract Amount (by approved Change Orders): \$ _____
Adjusted Contract Time (by approved Change Orders): _____ Days
Adjusted Contract Completion Date: _____

STATUS OF WORK PERFORMED

Total Value of Original Work Performed to Date: \$ _____
Total Value of Change Order Work Performed to Date (with attachment): \$ _____
Total Value of All Work Performed to Date: \$ _____
Value of Materials Stored (Attach Statement): \$ _____
Less _____% Retained by Owner: \$ _____
Net Amount Earned on Contract to Date: \$ _____
Fewer Amounts of Previous Payments Approved: \$ _____

BALANCE DUE THIS PAYMENT: \$ _____

Value of Work Remaining to be Completed: \$ _____
Percentage Complete to Date (Value/Time): _____ % _____ %

CERTIFICATION OF CONTRACTOR

I certify to the best of my knowledge and belief that all items and amounts on the face of the attached estimate and invoice and this Application for Payment are correct; that all Work has been performed and/or material supplied in full accordance with the terms and conditions of the Contract Documents, including all duly authorized deviations, substitutions, alterations, additions and/or deletions; that the foregoing is a true and correct statement of the Contract Price up to and including the last day of the period covered by this estimate and Application for Payment; that no part of the "BALANCE DUE THIS PAYMENT" has been received; that all previous Progress Payments received on this Agreement have been applied by the undersigned to discharge in full all obligations of the undersigned incurred in connection with the Work covered by prior applications for payment under this Agreement; and that all materials and equipment incorporated in said payment or otherwise listed in or covered by this Application for Payment are free and clear of all liens, claims, security interest and encumbrances.

APPROVALS

This Application for Payment has been checked, verified and approved for payment by:

Contractor	By	Title	Date
Resident Project Rep.	By	Title	Date
Engineer	By	Title	Date
Owner	By	Title	Date

AFFIDAVIT OF PAYMENT OF CLAIMS

BY: _____ (Contractor)

THIS DAY _____ personally appeared before me, _____, a Notary Public in and for the City/County/State of Virginia, and being by me first duly sworn states that all Subcontractors and suppliers of labor and materials have been paid all sums due them to date for Work performed or materials furnished in the performance of the Agreement between:

_____ (Owner)

and _____ (Contractor)

dated _____, 20____, for the construction of _____

_____ or arrangements have been made by the Contractor satisfactory to such Subcontractors and suppliers with respect to the payments of such sums as may be due them by the Contractor.

CONTRACTOR

BY: _____

TITLE: _____

DATE: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

My commission expires on the _____ day of _____, 20____.

NOTARY PUBLIC

SEAL OF CONTRACTOR

NOTARY SEAL

IV. CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Description: _____ Project No _____

Other: _____
Location: _____ Completion Date: _____

Contract Date: _____
Contract For: _____ Contractor: _____
Owner: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

TO WIT: The Owner and Contractor are hereby advised that the Work to which this certificate applies has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and that all Work is hereby declared to be substantially complete in accordance with the Contract Documents on:

Date of Substantial Completion

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive and the failure to include an item in it does not alter the responsibility of the CONTRACTOR to complete all items of the Work in accordance with the Contract Documents. When this certificate applies to a specified part of the Work, the items in this tentative list shall be completed or corrected by the CONTRACTOR within _____ Days of the above date of substantial completion. The date of substantial completion is the date which all guarantees and warranties begin, except as follows:

This certificate is issued, accepted, and acknowledged by:

_____ Engineer	By _____	_____ Title	_____ Date
_____ Contractor	By _____	_____ Title	_____ Date
_____ Owner	By _____	_____ Title	_____ Date

V. STATEMENT OF SURETY COMPANY

IN ACCORDANCE with the provisions of the AGREEMENT dated _____, 20____,

BETWEEN _____
(OWNER)

AND _____
(CONTRACTOR)

THE _____
(SURETY)

SURETY on the Material and Labor Payment BOND of:

(CONTRACTOR)

after a careful examination of the books and records of said CONTRACTOR or after receipt of an affidavit from CONTRACTOR, which examination of affidavit satisfies SURETY that all claims for labor and materials have been satisfactorily settled, hereby approves of the final payment to the said _____, CONTRACTOR, and by these presents witnesseth that payment to the CONTRACTOR of the final estimates shall not relieve SURETY of any of its obligations to

(OWNER)

as set forth in the said SURETY COMPANY'S BOND.

IN WITNESS WHEREOF, said SURETY has hereunto set its hand and seal this _____ day of _____, 20____.

ATTEST:

(SEAL) _____ BY _____
PRESIDENT

NOTE: This statement, if executed by any person other than the President or Vice President of the Company, shall be accompanied by a certificate of even date showing authority conferred upon the person so signing to execute such instruments on behalf of the Company represented.

CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS THAT:

_____ (Contractor) of _____ County/City and State of _____ does hereby acknowledge that he has received this day from the _____ (Owner) the sum of One Dollar (\$1.00) and other valuable consideration in full satisfaction and payment of all sums of money owing, payable and belonging to _____ (Contractor) Dated _____, 20____.

NOW, THEREFORE, the said _____ (Contractor) _____ (for myself, my heirs, executors and administrators; for itself, its successors and assigns) do by these presents remise, release, quitclaim and forever discharge the said _____, Owner, its successors and assigns, of and from all claims and demands arising from or in connection with the said Agreement dated _____, 20____, and of and from all, and all manner of action and actions, cause and causes of action and actions, suits, debts, dues, duties, sum and sums of money accounts, reckonings, bonds, bills, specialties, covenants, contracts, agreements, promises, variances, damages, judgements, extents, executions, claims and demand, whatsoever in law or equity, or otherwise which against the said _____, Owner, its successors and assigns ever had, now have, or which (I, my heirs, executors, or administrators; it, its successors and assigns) hereafter can, shall or may have, for upon or by reason for any matter, cause or thing whatsoever, from the beginning of the world to the date of these presents.

IN WITNESS WHEREOF _____ (Contractor) has caused these presents to be duly executed this _____ day of _____, 20____.

Signed, Sealed and Delivered
in the Presence of:

CONTRACTOR _____
(SEAL)

BY: _____

Title

ATTEST:

SECRETARY

VI. MANHOLE/STRUCTURE PROTECTIVE COATING POST INSTALLATION CERTIFICATION

(Submit prior to Substantial Completion)

Project Name _____

Owner _____

Contractor _____

Agreement No. _____

Applicator _____

Company Name: _____

Address: _____

Telephone: _____

I certify that the coating system identified below was installed in conformance with the manufacturer's recommendations at the conditions listed below.

Applicator

Date

This applicator is certified by _____, Coatings Manufacturer, located at

(Address)

and approved in the proper application of the specified coating system. The materials and workmanship for Type B (80 mil) coatings systems are warranted for a period of five (5) years from the date of Substantial Completion of the project.

Coatings Manufacturer Authorized Representative/Title

Date

Coating System: _____

(Use Separate Form For Each Coating System Applied)

Date Applied	Manhole/ Structure Number	Actual Substrate Conditions			Ambient Air Conditions		Min/Max Recoat (Hrs/Hrs)	Dry Film Thickness	
		CSP Rating	Temp. (°F)	Moisture (Yes/No)	Temp. (°F)	Humidity (%)		(Avg)	(Min)

VII. STANDARD BID ITEMS AND UNITS

Section	Bid Item	Category	Unit
301	Clearing and grubbing	Clearing and Grubbing	ACRE or LS
301	Tree protection fencing	Clearing and Grubbing	LF
302	Storm sewer pipe (diameter and type)	Drainage Structures	LF
302	Pipe culverts (waterway opening)	Drainage Structures	LF
302	Pipe reducers (larger diameter)	Drainage Structures	LF
302	Jacked pipe (diameter and type)	Drainage Structures	LF
302	Reinstalled pipe (diameter)	Drainage Structures	LF
302	End sections (standard and size)	Drainage Structures	EA
302	End walls	Drainage Structures	EA
302	Box culverts (waterway opening)	Drainage Structures	LF
302	Pipe grate	Drainage Structures	LF or EA
302	Drop / yard inlets, catch basins, and intake boxes	Drainage Structures	EA
302	Base section (drop inlets and manholes)	Drainage Structures	LF
302	Manhole (0-6' depth) (4 or 5 foot diameter)	Drainage Structures	EA
302	Manhole (>6' depth) (4 or 5 foot diameter)	Drainage Structures	VF
302	Conflict manhole	Drainage Structures	EA
302	Concrete spring boxes	Drainage Structures	EA
302	Junction boxes	Drainage Structures	EA
302	Reconstructed manholes	Drainage Structures	EA
302	Precast arches	Drainage Structures	LF
302	Post installation inspection of storm pipes and culverts (LF of Televised Pipe)	Drainage Structures	LF
303	Regular excavation	Earthwork	CY, SY or LS
303	Pavement demolition (type and depth of pavement) [in proposed pavement]	Earthwork	SY
303	Pavement demolition (type and depth of pavement) [outside proposed pavement]	Earthwork	SY
303	Curb & gutter demolition	Earthwork	LF
303	Existing structure demolition	Earthwork	EA
303	Existing pipe demolition	Earthwork	LF
303	Existing sidewalk demolition	Earthwork	SY
303	Existing driveway demolition	Earthwork	SY
303	Undercut excavation (regular)	Earthwork	CY
303	Select material (min. CBR)	Earthwork	CY
303	Suitable fill (regular)	Earthwork	CY or TON
303	Backfill of undercut excavation (regular)	Earthwork	CY or TON
303	Surcharge placement and removal	Earthwork	CY
303	Settlement plate	Earthwork	EA
303	Geotextile fabric for base preparation	Earthwork	SY
303	Backfill of undercut excavation (trenching)	Earthwork	CY or TON
303	Undercut excavation (trenching)	Earthwork	CY
303	Sheeting, bracing, and shoring left in place	Earthwork	LS

Section	Bid Item	Category	Unit
	(trenching)		
303	Rip-Rap for erosion control	Earthwork	TON or SY
303	Check dam (log or rock)	Earthwork	EA
303	Baled straw check dam	Earthwork	EA
303	Temporary silt fence	Earthwork	LF
303	Geotextile fabric for erosion control	Earthwork	SY
303	Temporary filter barrier	Earthwork	LF
303	Sediment basin excavation	Earthwork	CY
303	Slope drain	Earthwork	EA
303	Siltation control excavation for Sedimentation traps and basins	Earthwork	CY
303	Inlet protection (type of device)	Earthwork	EA
303	Construction entrance	Earthwork	EA
303	Protective coverings and soil stabilization mats	Earthwork	SY
305	Select material - Types I and min CBR	Subgrade and Shoulders	Tons
305	Select material - Types II or III	Subgrade and Shoulders	CY
305	Gravel driveway replacement	Subgrade and Shoulders	EA
309	Aggregate material (base course)	Aggregate Base Course	CY or TON
309	Aggregate base material (base course for curb and gutter)	Aggregate Base Course	CY or TON
310	Tack coat	Tack and Prime Coat	GALLON
310	Prime coat	Tack and Prime Coat	GALLON or SY
313	Asphalt surface treatment	Asphalt Surface Treatment	SY
315	Asphalt concrete (type and class)	Asphalt Concrete Pavement	TON or SY
315	Bituminous leveling course	Asphalt Concrete Pavement	TON
315	Rumble strips (mainline or shoulder)	Asphalt Concrete Pavement	LF
315	Liquid asphalt coating (Rumble Strips)	Asphalt Concrete Pavement	SY
315	Saw cut asphalt concrete pavement (Thickness)	Asphalt Concrete Pavement	LF
315	Edge clipping of shoulders	Asphalt Concrete Pavement	LF
315	Asphalt driveways (Thickness)	Asphalt Concrete Pavement	SY or EA
317	Pavement patch	Pavement Patching	LF or SY
406	Reinforcing steel or welded wire mesh	Reinforcing Steel	POUND
406	Epoxy-coated reinforcing steel	Reinforcing Steel	POUND
414	Dry riprap (class and depth)	Riprap	SY or TON
414	Mortared riprap	Riprap	SY
414	Grouted riprap	Riprap	SY or TON
414	Dumped riprap	Riprap	SY or TON
414	Concrete riprap in bags	Riprap	CY
414	Erosion control rip rap	Riprap	SY or TON
414	Erosion control stone – culvert outlet protection (Class and Standard)	Riprap	SY or TON
501	Underdrain and combination underdrain	Underdrains	LF

Section	Bid Item	Category	Unit
501	Geotextile fabric	Underdrains	LF
501	Outlet pipe	Underdrains	LF
502	Curb, combination curb and gutter (detail designation)	Concrete Items	LF
502	Gutter, standard, radial and entrance	Concrete Items	SY or LF
502	Paved ditch	Concrete Items	SY or LF
502	Paved flume	Concrete Items	SY or LF
502	Entrance gutter	Concrete Items	SY or LF
502	Street connection pavement	Concrete Items	SY or LF
502	Energy dissipators	Concrete Items	EA
502	Sign island	Concrete Items	EA or SY
502	Median barriers (including delineators)	Concrete Items	LF
502	Median Strips (width)	Concrete Items	LF or SY
502	Directional island curb	Concrete Items	LF
502	Hydraulic cement concrete sidewalks (thickness)	Concrete Items	SY
502	Concrete steps (concrete)/reinforcing steel	Concrete Items	CY /LBS
502	Handrails	Concrete Items	LF
502	Geotextile fabric	Concrete Items	SY
502	Curb cut ramps	Concrete Items	SY
502	Composite detectable warning panels	Concrete Items	SF
502	Concrete driveway replacement (Pipe Installation)	Concrete Items	EA
502	Concrete driveway and entrances	Concrete Items	SY
505	Guardrail (Standard)	Guardrail and Steel Median Barriers	LF
505	Radial guardrail (Standard)	Guardrail and Steel Median Barriers	LF
505	Reuse guardrail (Standard)	Guardrail and Steel Median Barriers	LF
505	Steel median barrier (Standard)	Guardrail and Steel Median Barriers	LF
505	W-beam median barriers	Guardrail and Steel Median Barriers	LF
505	Intermediate anchorage assembly	Guardrail and Steel Median Barriers	EA
505	Terminal guardrail treatment (Back of ditch)	Guardrail and Steel Median Barriers	LF
505	Terminal guardrail (Roadway side)	Guardrail and Steel Median Barriers	EA
505	Guardrail terminal (Standard and type)	Guardrail and Steel Median Barriers	LF or EA
505	Reuseable guardrail terminal (Standard and type)	Guardrail and Steel Median Barriers	LF or EA
505	Rub rail	Guardrail and Steel Median Barriers	LF
505	Guardrail beam	Guardrail and Steel Median Barriers	LF
505	Guardrail post (Standard and Length)	Guardrail and Steel Median Barriers	LF
505	Guardrail offset block, wood or composite	Guardrail and Steel Median Barriers	EA
505	Remove existing guardrail	Guardrail and Steel Median Barriers	LF
505	Remove existing guardrail terminal	Guardrail and Steel Median Barriers	EA
505	Fixed object attachment (Standard)	Guardrail and Steel Median Barriers	EA
505	Guardrail terminal site preparation (Standard)	Guardrail and Steel Median Barriers	EA

Section	Bid Item	Category	Unit
505	Bull nose barrier	Guardrail and Steel Median Barriers	EA
507	Fences (Standard and Height)	Fences	LF
507	Gate (Standard and Length)	Fences	EA
507	High visibility fences	Fences	LF
507	Pedestrian fence	Fences	LF
510	Remove, reset, relay, adjust, install, modify, reconstruct relocate, existing (Item or standard)	Relocating or Modifying Existing Miscellaneous Items	EA, LF, SY, CY or LS
510	Adjust structure heights (Type)	Relocating or Modifying Existing Miscellaneous Items	EA
511	Allaying dust	Allaying Dust	HR
512	Flagger service (Certified)	Maintaining Traffic	HR
512	Flagger service (Police-assisted))	Maintaining Traffic	HR
512	Automated flagger assistance device (Per device)	Maintaining Traffic	HR
512	Pilot vehicle	Maintaining Traffic	HR
512	Electronic arrow	Maintaining Traffic	HR
512	Warning light	Maintaining Traffic	DAY
512	Group 2 channelizing devices	Maintaining Traffic	DAY,
512	Pedestrian barricade devices (per location)	Maintaining Traffic	LF
512	Traffic barrier service (per location) (Type and/or standard)	Maintaining Traffic	LF
512	Traffic barrier service guardrail termination (standard)	Maintaining Traffic	EA or LF
512	Impact attenuator service (Type)	Maintaining Traffic	EA
512	Temporary traffic control signal	Maintaining Traffic	LS
512	Temporary signalization	Maintaining Traffic	LS
512	Modify signal (location)	Maintaining Traffic	LS
512	Temporary construction pavement marking (type and message)	Maintaining Traffic	LF
512	Temporary construction pavement message marking (type and width)	Maintaining Traffic	EA
512	Temporary pavement marker	Maintaining Traffic	EA
512	Eradication of existing pavement marking (per 6-inch width)	Maintaining Traffic	LF
512	Eradication of existing non-linear pavement markings	Maintaining Traffic	SF
512	Temporary detour (standard and type)	Maintaining Traffic	LF
512	Crusher run aggregate (No. 25 or 21A)	Maintaining Traffic	TON
512	Type III barricades	Maintaining Traffic	EA
512	Construction signs	Maintaining Traffic	SF
512	Truck mounted attenuator	Maintaining Traffic	HR
512	Portable traffic control signal	Maintaining Traffic	LS
512	Portable changeable message sign	Maintaining Traffic	HR
512	Maintenance of traffic	Maintaining Traffic	LS
512	Temporary curb ramp	Maintaining Traffic	EA

Section	Bid Item	Category	Unit
512	Temporary detectable warning surface	Maintaining Traffic	LF
512	Portable temporary rumble strips	Maintaining Traffic	EA
513	Mobilization (2 payments)	Mobilization & Demobilization	LS
515	Milling pavement	Planing or Milling Pavement	SY
521	Pavers	Pavers	SY
530	Abandon pipe, (diameter/flowable fill) < larger than 2-inch>	Abandonment of Existing Pipelines and Structures	LF or CY
530	Abandon meter boxes	Abandonment of Existing Pipelines and Structures	EA
530	Abandon laterals and cleanouts (on active mains)	Abandonment of Existing Pipelines and Structures	LF or EA
530	Abandon drainage structures	Abandonment of Existing Pipelines and Structures	EA
530	Abandon metallic structures	Abandonment of Existing Pipelines and Structures	EA
530	Abandon manholes	Abandonment of Existing Pipelines	EA
530	Abandon meter/valve vaults/boxes	Abandonment of Existing Pipelines and Structures	EA
530	Abandon fire hydrants	Abandonment of Existing Pipelines and Structures	EA
602	Topsoil (4-or 6-inch depth)	Topsoil	ACRE or CY
603	Lime	Seeding	TON
603	Fertilizer (per LB of N+P+K)	Seeding	LB
603	Regular seed	Seeding	LB
603	Temporary Seed	Seeding	LB
603	Legume Seed	Seeding	LB
603	Overseeding	Seeding	LB
603	Hydraulic erosion control products (type)	Seeding	SY
603	Sedimentation retention products	Seeding	LF
604	Sod, fertilizer and lime	Sodding	SY
605	Plants (Type and size)	Planting	EA
605	Mulching and remulching	Planting	100 SF
606	Rolled erosion control product (drainage channels)	Rolled Erosion Control Products	SY
606	Rolled erosion control product (slopes)	Rolled Erosion Control Products	SY
608	Mowing	Mowing	HR or LS
700	Concrete foundation (Standard, type and, size)	Traffic Control Devices	EA or CY
700	Electrical service (Standard and type)	Traffic Control Devices	EA
700	Luminaire arm (Length) Lighting pole	Traffic Control Devices	EA
700	(Standard luminaire mounting height, and length of luminaire arm)	Traffic Control Devices	EA
700	Signal pole (Standard, length, number, and length of arms)	Traffic Control Devices	EA
700	Overhead sign structure	Traffic Control Devices	EA

Section	Bid Item	Category	Unit
700	Sign posts	Traffic Control Devices	LF
700	Pedestal pole (Standard and length)	Traffic Control Devices	EA
700	Wood pole (Class and length)	Traffic Control Devices	EA
700	Conductor cable (Size/number)	Traffic Control Devices	LF
700	Conduit (Type and size)	Traffic Control Devices	LF
700	Trench excavation (Standard)	Traffic Control Devices	LF
700	Junction box (Standard)	Traffic Control Devices	EA
700	Test bores	Traffic Control Devices	EA
700	Electrical service grounding electrode (per 10 foot)	Traffic Control Devices	EA
700	Bored conduit (size)	Traffic Control Devices	LF
704	Pavement line marking (Type and/or class and width)	Traffic Control Devices	LF
704	Pavement message marking (Location)	Traffic Control Devices	EA or LF
704	Pavement marker (Type)	Traffic Control Devices	EA
801	Water main (Type & diameter)	Water Distribution Systems	LF
801	Fire hydrant assembly (Type I, II or III)	Water Distribution Systems	EA
801	Water sampling stations	Water Distribution Systems	EA
801	Gate valves (size and diameter)	Water Distribution Systems	EA
801	Butterfly valves (diameter)	Water Distribution Systems	EA
801	Water meter box	Water Distribution Systems	EA
801	Tapping sleeve/valve (diameter)	Water Distribution Systems	EA
801	Blowoff assembly	Water Distribution Systems	EA
801	Manual air vent assembly	Water Distribution Systems	EA
801	Type K copper service lines (jack and pull) (single or dual)	Water Distribution Systems	LF or EA
801	Type K copper service lines (open cut) (single or dual)	Water Distribution Systems	LF or EA
801	Private service relocations	Water Distribution Systems	EA
801	Polyethylene encasement	Water Distribution Systems	LF
801	Connections to existing water mains	Water Distribution Systems	EA
801	Plugging existing 2" water main	Water Distribution Systems	EA
801	Offset of existing water main	Water Distribution Systems	LF
801	Cut in tees	Water Distribution Systems	EA
801	Cut in crosses	Water Distribution Systems	EA
801	Cut in valves	Water Distribution Systems	EA
801	Tracer Wire Box	Water Distribution Systems	EA
802	Gravity sewer pipe (diameter, type and depth 0-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, 18-20, >20')	Sanitary Gravity Sewer Systems	LF
802	Sewer laterals (type and diameter)	Sanitary Gravity Sewer Systems	LF or EA
802	Manhole, 0' to 6' in depth (4-or 5-foot dia.)	Sanitary Gravity Sewer Systems	EA
802	Manhole extra depth (4-or 5-foot dia.)	Sanitary Gravity Sewer Systems	VF
802	Drop manhole (inside or outside)	Sanitary Gravity Sewer Systems	EA
802	Non Standard Manhole (Type)	Sanitary Gravity Sewer Systems	VF or EA

Section	Bid Item	Category	Unit
802	Watertight manhole frame and cover	Sanitary Gravity Sewer Systems	EA
802	Clean-out assemblies (mainline and service lateral)	Sanitary Gravity Sewer Systems	EA
802	Connections to existing manholes	Sanitary Gravity Sewer Systems	EA
802	Connections from new manholes	Sanitary Gravity Sewer Systems	EA
802	Manhole/structure coatings (Type A or B, 4- or 5-foot manhole diameter)	Sanitary Gravity Sewer Systems	VF or EA
803	Force main (type and diameter)	Sanitary Force Main Systems	LF
803	Manual air vent assembly	Sanitary Force Main Systems	EA
803	Valves (type, size and diameter)	Sanitary Force Main Systems	EA
803	Tapping sleeve/valve (size and diameter)	Sanitary Force Main Systems	EA
803	Connections to existing force mains or manholes	Sanitary Force Main Systems	EA
803	Interior pipe corrosion lining (diameter)	Sanitary Force Main Systems	LF
803	Offset of existing force main	Sanitary Force Main Systems	LF
803	Cut in tees	Sanitary Force Main Systems	EA
803	Cut in crosses	Sanitary Force Main Systems	EA
803	Cut in valves	Sanitary Force Main Systems	EA
803	Tracer Wire Box	Sanitary Force Main Systems	EA
804	Bore and jack casing (diameter)	Boring and Jacking	LS
806	Horizontal directional drill	Horizontal Directional Drilling	LS

Sanitary Sewer Rehabilitation

(Sections 810-824)

810	Light cleaning (diameter and, w/ or w/out CCTV)	Sewer Line Cleaning	LF
810	Heavy cleaning (diameter and number of passes greater than 3 and, w/ or w/out CCTV)	Sewer Line Cleaning	LF
810	Manhole cleaning	Sewer Line Cleaning	EA
810	Descaling (w/ or w/out CCTV)	Sewer Line Cleaning	LF
811	Television inspection (Mainline sewer or lateral lines)	Television Inspection	LF
812	Bypass pumping / Flow ~ ____ MGD (Flow > 2 MGD)	Bypass Pumping	LS or DAY
813	CIPP method/Wall thickness=____mm (Diameter)	Pipe Rehabilitation By Cured-In- Place Method	LF
813	Removal of intruding service lateral Connections (ferrous or non-ferrous)	Pipe Rehabilitation By Cured-In- Place Method	EA
813	Longitudinal temperature monitoring	Pipe Rehabilitation By Cured-In- Place Method	SEGMENT
815	Pipe bursting	Pipe Bursting	LF
815	Sealing and benching manholes	Pipe Bursting	EA
816	Cutting of Protruding Taps in Mainline	Sewer Pipe and Lateral Joint Testing	EA
816	Testing of Lateral Connections in Mainline Sewers	Sewer Pipe and Lateral Joint Testing	EA

Section	Bid Item	Category	Unit
816	Testing of Pipe Joints in Mainline Sewers	Sewer Pipe and Lateral Joint Testing	EA
816	Testing of Lateral Connections to Manholes	Sewer Pipe and Lateral Joint Testing	EA
817	Packer Injection Grouting of Pipe Joints in Mainline Sewers	Chemical Grouting	EA
817	Packer Injection Grouting of Laterals Connections in Mainline Sewers	Chemical Grouting	EA
817	Chemical Grouting of Lateral Connected to Manholes	Chemical Grouting	EA
817	Chemical Grout	Chemical Grouting	GAL
817	Post Construction CCTV Inspection	Chemical Grouting	LF
817	Post Lateral Connection Residual Grout Cleaning	Chemical Grouting	EA
817	Warranty Testing Mainline Joints or Lateral Pipe Connections.	Chemical Grouting	EA
818	Sewer point repair (diameter, material, and depth 0-6, 6-8, 8-10, 10-12, 12-14, 14-16, 16-18, 18-20, >20')	Point Repair By Excavation	LF
819	Insitu Rehabilitation Repair	Insitu Structural Point Repair	LF
820	Insitu Sectional Lining	Insitu Point Repair By Sectional Lining	LF
820	Removal of Protruding Service Laterals	Insitu Point Repair By Sectional Lining	EA
821	Service laterals (diameter and material)	Sanitary Sewer Service Reconnection	LF
821	Sealing of laterals	Sanitary Sewer Service Reconnection	EA
821	Reinstatement of laterals	Sanitary Sewer Service Reconnection	EA
822	Manhole rehabilitation (Method) (4- or 5-ft diameter)	Manhole Rehabilitation	VF
822	Manhole frame seals	Manhole Rehabilitation	EA
823	Rehabilitated pipe	Sliplining	LF
824	One piece main and lateral liner (1 st 3 feet)	Sewer Lateral Rehabilitation By Cured-In-Place Method	EA
824	One piece main and lateral liner (Additional feet)	Sewer Lateral Rehabilitation By Cured-In-Place Method	LF
824	Standard Lateral Liner (CIPP thickness/diameter)	Sewer Lateral Rehabilitation By Cured-In-Place Method	LF
824	Cleanout	Sewer Lateral Rehabilitation By Cured-In-Place Method	EA
824	Remove/Replace MH Frame and Cover	Sewer Lateral Rehabilitation By Cured-In-Place Method	EA
824	Removal of Intruding Service Laterals	Sewer Lateral Rehabilitation By Cured-In-Place Method	EA

End of Section

SECTION 110

SPECIAL PROVISIONS

I. CONSTRUCTION DRAWINGS:

Plans are the property of the Owner and shall not be used for any purposes other than those specified in these Contract Documents.

II. HAMPTON ROADS PLANNING DISTRICT COMMISSION REGIONAL CONSTRUCTION STANDARDS:

Prior to construction, the Contractor is required to obtain a copy of the Hampton Roads Planning District Commission Regional Construction Standards, Sixth Edition, from the Hampton Roads Planning District Commission located in Chesapeake, Virginia.

The following modifications, additions, or deletions to the HRPDC Regional Construction Standards, Sixth Edition are hereby incorporated into the contract documents.

1. Contractor shall refer to the Town of Smithfield Technical Specifications which will take precedence over the HRPDC Regional Construction Standards should a conflict arise.
2. See attached Town of Smithfield General Terms and Conditions and Special Terms and Conditions which shall take precedence over the HRPDC Regional Construction Standards should a conflict between the documents arise.
3. See attached CONCRETE CURING, CONCRETE REPAIR, STEEL WATER STORAGE TANK PAINTING AND VAULT PAINTING Technical Specifications and Inspection Report which are part of the contract documents.
4. See attached Davis-Bacon Act and American Iron and Steel Requirements which are part of the contract documents.

SECTION 03370
CONCRETE CURING

I. GENERAL

1.1 SECTION INCLUDES

- A. Initial and final curing of horizontal and vertical concrete surfaces.

1.2 APPLICABLE PUBLICATIONS

A. American Concrete Institute (ACI)

- 1. ACI 301 – Structural Concrete for Buildings
- 2. ACI 302 – Recommended Practice for Concrete Floor and Slab Construction
- 3. ACI 308 – Standard Practice for Curing Concrete

B. American Society of Testing and Materials (ASTM)

- 1. C171 – Sheet Materials for Curing Concrete
- 2. C309 – Liquid Membrane-Forming Compounds for Curing Concrete
- 3. D2103 – Polyethylene Film and Sheeting

1.3 SUBMITTALS

- A. Product Data: provide data on curing compounds, compatibilities, and limitations.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 302.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver curing materials in manufacturer's packaging, including application instructions.
- B. Materials shall be stored in a covered, protected area away from moisture and damp surroundings.

II. PRODUCTS

2.1 MATERIALS

- A. Membrane Curing Compound Type A: ASTM C309 Type 1 or 1-D except that moisture loss shall not exceed 0.03 gr./sq. cm.
- B. Water: Potable, not detrimental to concrete.

III. EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces are ready to be cured.

3.2 EXECUTION – HORIZONTAL SURFACES

- A. Cure floor surfaces in accordance with ACI 308.
- B. Membrane Curing Compound: Apply curing compound in accordance with manufacturer's instructions in one (1) coat.

3.3 EXECUTION – VERTICAL SURFACES

- A. Cure surfaces in accordance with ACI 308.
- B. Membrane Curing Compound: Apply curing compound in accordance with manufacturer's instructions.

3.4 PROTECTION OF FINISHED WORK

- A. Do not permit traffic over unprotected floor surface.

End of Section

SECTION 03732
CONCRETE REPAIRS

I. GENERAL

1.1 SCOPE

- A. The Contractor shall provide all labor, materials and equipment to perform concrete restoration and repairs as indicated in the Contract Documents. The work consists of repairing spalled areas and sealing of cracks.
- B. All damage to concrete and concrete surfaces which results from the required removal of embedded items, from any construction activity required by the Contract Documents, from any other CONTRACTOR activities, or which existed previously in structures identified to be repaired by the Contract Documents shall be repaired as specified herein.
- C. Deteriorated Concrete:
 - 1. All concrete surfaces which show signs of deterioration shall be repaired.

1.2 APPLICABLE PUBLICATIONS

- A. American Concrete Institute (ACI)
 - 1. ACI 546R – Concrete Repair Guide
- B. American Society of Testing and Materials (ASTM)
 - 1. C109 – Test Method for Compressive Strength of Hydraulic Cement Mortars
 - 2. C157 – Test Method for Length Change of Hardened Cement Mortar and Concrete
 - 3. C881 – Specifications for Epoxy-Resin-Base Bonding Systems for Concrete
 - 4. C882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
- C. American Welding Society (AWS)
 - 1. AWS D1.4 – Structural Welding Code – Reinforcing Steel

1.3 SUBMITTALS

- A. Materials specification sheets including product information and recommended placement procedures and materials safety data sheets shall be submitted for all products used for this project.
- B. Manufacturer's warranty.

1.4 QUALIFICATIONS

- A. Applicators shall be licensed in the state in which the Work shall be done for no less than two years and shall be certified by the repair product manufacturer.

1.5 WARRANTY

- A. The Manufacturer shall warrant the equipment, materials, and products specified in this section against defective materials and workmanship with the Manufacturer's standard warranty, but for no less than two years from the date of Final Completion. If the Manufacturer's standard warranty is less than the stipulated period, the Manufacturer shall provide a special extended warranty for the stipulated period.
- B. The Contractor shall warranty the Work against defects for two years from the date of Final Completion.

II. MATERIALS

2.1 DELIVERY AND STORAGE:

- A. All manufacturers' materials shall be delivered in original packaging.
- B. Materials shall be stored in a covered, protected area away from moisture and damp surroundings.

2.2 CONCRETE MATERIALS

- A. Cement: Type II Portland cement shall be used unless noted otherwise. Where repairs are made on wall surfaces open to view and above normal water surface elevations, white Portland cement shall be blended with the Type II cement as needed to match the color of the adjacent existing concrete surface.
- B. Repair Concrete: Repair concrete, where required, shall be structural concrete with one-inch maximum coarse aggregate.
- C. Repair Mortar shall be a prepackaged cement-based product specifically formulated for the repair of surface defects. The repair mortar shall have the

following properties:

Physical Property	Value	ASTM Standard
Compressive Strength (min) at 1 day at 28 days	4000 psi 6000 psi	C109
Shrinkage (max) at 28 days drying	0.0 percent	C157
Bond Strength (min) at 1 day at 7 days	1500 psi 2500 psi	C882

III. EXECUTION

3.1 GENERAL

A. Surface Preparation:

1. The entire area to be repaired shall be cleaned of all laitance and foreign material by chipping using lightweight demolition hammers, not to exceed 18 pounds in weight, and/or a heavy sandblasting. All removals are to be performed in accordance with IRCI guidelines. The surface shall be further roughened as specified herein. Where non-shrink grout or repair mortar is used, any additional surface preparation steps recommended by the manufacturer shall be performed.
2. Where repair concrete or cement grout is used or where the repair mortar or non-shrink grout manufacturer recommends a wet or saturated surface, water shall be delivered to the surface continuously for a minimum of 4 hours. The concrete shall be prevented from drying until after the grouting operation is completed. Unrepaired surfaces shall be rewetted by water spray on at least a daily basis. Should more than 4 days elapse without rewetting the unrepaired surfaces, the original saturating procedure shall be repeated. All standing water in areas to be repaired shall be removed prior to placement of repair material. Means to remove excess water from the structure shall be provided.
3. Where the repair material manufacturer recommends the use of an epoxy bonding agent, the recommendations of both the repair material and bonding agent manufacturers shall be followed.

B. Care shall be taken to fully consolidate the repair material, completely filling all portions of the area to be filled.

C. The repair surface shall be brought into alignment with the adjacent existing surfaces to provide a uniform, even surface. The repair surface shall match adjacent existing surfaces in texture and shall receive any coatings or surface treatments which had been provided for the existing surface.

- D. The Contractor shall halt work when weather conditions detrimentally affect the quality of the repair. Follow manufacturer's instructions for weather conditions and temperature ranges.
- E. Curing:
 - 1. Curing of repair mortar and non-shrink grout shall be in accordance with the manufacturer's recommendations except that the minimum cure period shall be 3 days.
- F. All products are to be mixed following the specific guideline of each particular product.
- G. All products are to be applied by following the specified data sheets of each particular product.

3.2 TREATMENT OF SURFACE DEFECTS

- A. Surface defects are depressions in a concrete surface which do not extend all the way through the member.
- B. Preparation:
 - 1. All loose, damaged concrete shall be removed by chipping to sound material.
 - 2. Where existing reinforcing bars are exposed, concrete shall be removed to a minimum of one inch all around the bars. If the existing bars are cut through, cracked, or the cross-sectional area is reduced by more than 25 percent, the Engineer shall be notified immediately.
 - 3. The perimeter of the damaged area shall be score cut to a minimum depth of 0.5 inch and a maximum depth to not cut any existing reinforcing steel. Existing concrete shall be chipped up to the score line so that the minimum thickness of repair mortar is 0.5 inch.
- C. Repair Material:
 - 1. Repair of surface defects in members which are normally in contact with water or soil or in the interior surfaces of enclosed chambers which contain water shall be made only with repair mortar.
 - 2. Repair of other surface defects may be by the application of repair mortar, repair concrete, shotcrete, or cement grout, as appropriate.

3.8 REPAIR OF DETERIORATED CONCRETE

- A. This section pertains to concrete which has been damaged due to corrosion

of reinforcing steel, physical damage due to abrasion, and damage due to chemical attack. The only material acceptable for surface repair is repair mortar as specified herein.

B. Surface Preparation:

1. All loose, broken, softened, and acid contaminated concrete shall be removed by sandblasting and chipping down to sound, uncontaminated concrete.
2. When the removal of deteriorated concrete is completed, the Contractor shall notify the Owner's Representative and Engineer. Two days shall be scheduled for the Owner's Representative and the Engineer to inspect the surface, determine if additional concrete must be removed, and to develop any special repair details that may be needed. Should it be determined that additional concrete must be removed to reach sound, uncontaminated material, another two-day period shall be scheduled for further evaluation after the end of the additional removal.
3. Additional surface preparation shall follow the recommendations of the repair mortar manufacturer.

C. Repair Mortar Placement:

1. The procedures recommended by the manufacturer for the mixing and placement of the repair mortar shall be followed.
2. After the initial mixing of the repair mortar, additional water shall not be added to change the consistency should the mix begin to stiffen.
3. Repair mortar shall be placed to a minimum thickness as recommended by the manufacturer but not less than 0.50 inch. Should there be areas where less than the minimum repair mortar depth of concrete is removed, the Contractor may, at its option, remove additional concrete to attain the minimum repair mortar thickness or may place repair mortar so as to increase the original thickness of the member. In any case, repair mortar shall be added so that the minimum cover over existing reinforcing steel is 2 inches. The Contractor shall not place repair mortar so as to create locally raised areas. Where there is a transition with wall surfaces which are not in need of repair, the repair mortar shall not be feathered at the transition. A score line shall be sawcut to not less than the minimum repair mortar depth and concrete chipped out to it to form the transition. Care shall be taken to not cut or otherwise damage any reinforcing steel.

4. The repair mortar shall be placed to an even, uniform plane to restore the member to its original surface. Tolerance for being out of plane shall be such that the gap between a 12-inch straight edge and the repair mortar surface does not exceed 0.125 inch and the gap between a 48-inch straight edge and the repair mortar surface does not exceed 0.25 inch. This shall apply to straight edges placed in any orientation at any location.

D. Finishing:

1. The repair mortar shall receive a smooth, steel trowel finish.
2. When completed, there shall be no sharp edges. All exterior corners, such as at penetrations, shall be made with a one-inch radius.

- E. Curing shall be performed as recommended by the repair mortar manufacturer, except that the cure period shall be at least 24 hours.

End of Section

SECTION 09 91 00

STEEL WATER STORAGE TANK PAINTING

PART 1 - GENERAL

1.01. DESCRIPTION OF WORK

- A. This item will consist of repair and preparation of surfaces to be painted, application of interior and exterior paint systems, paint system materials and disinfection of surfaces which contact potable water.
- B. The Wilson Road Tank Evaluation Report's state that the Caldwell Tanks lead content test analysis from 4/22/2010 shows the exterior coating system to be 2.4 percent by weight lead content and 0.10 percent by weight chromium content.

1.02. REFERENCES

The CONTRACTOR shall adhere to the latest Standards and Codes for work associated with Coating and Recoating as published by the following organizations. In the event there is a conflict between these Specifications and the standards, and codes, these Specifications shall govern. The OWNER's decision shall be final as the interpretation and/or conflict between these Specifications and the referenced standards and codes.

- A. The Society for Protective Coating's Steel Structures Painting Manual and specifications contained within shall be referred to as SSPC.
- B. American Water Works Association Standards shall be referred to as AWWA.
- C. American Society for the Testing of Materials standards and specifications shall be referred to as ASTM.
- D. U.S. Environmental Protection Agency shall be referred to as EPA.
- E. American National Standards Institute shall be referred to as ANSI.
- F. National Sanitary Foundation shall be referred to as NSF.
- G. Occupational Safety and Health Administration shall be referred to as OSHA.
- H. National Association of Corrosion ENGINEERs shall be referred to as NACE.
- I. Code of Federal Regulations shall be designated as CFR.

1.03. DEFINITIONS

- A. Interior "Wet" Surfaces shall consist of any interior surfaces, excluding inaccessible areas, of the water bowl that may be subjected to contact with potable drinking water, or its vapor. Generally these surfaces include – but are not limited to – the underside of the roof plate, interior of tank shell and upper cone, water bowl floor, rafters, pipes, wet side of access tube, the tank overflow and inlet/outlet pipes and structures, and ladders within the water bowl, and appurtenances.
- B. Exterior "Dry" Surfaces shall consist of exterior surfaces, excluding inaccessible areas, of the tank roof, shell, upper cone, pedestal, base cone, ladders, handrails, accessories, and appurtenances that are exposed to the elemental atmosphere.
- C. Near White Blast Cleaning SSPC-SP10, NACE 2 is defined as; a surface from which all oil, grease, dirt, mill scale, rust corrosion products, oxides paint, or other foreign matter have been completely removed. Ninety-five percent of each unit area (9 square inches) of prepared surface shall be free of light shadows, light streaks, or stains left after removal of the items

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listed above.

- D. Brush-Off Blast Cleaning SSPC-SP7, NACE 4 is defined as; a surface free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife after abrasive blast cleaning has been performed.

1.04. SYSTEM DESCRIPTION

- A. Surface Preparation: CONTRACTOR shall prepare all surfaces for painting in accordance with the SSPC Steel Structures Painting Manual except as amended herein.

- The finished quality of the Interior "Wet" Surface preparation shall conform to SSPC - SP10, "Near White Blast Cleaning."
- The finished quality of the Interior "Dry" Surface preparation shall conform to SSPC - SP10, "Near White Blast Cleaning."
- The finished quality of the Exterior "Dry" Surface preparation shall conform to SSPC - SP10, "Near White Blast Cleaning."

- B. Painting: All paint, primers and paint thinners, including primer for shop primed components, shall be from the same approved manufacturer. All coating systems shall be provided with contrasting colors so that subsequent coatings will be easily identified during the coating process.

All Paint shall conform to current state and federal regulations applicable to Volatile Organic Compounds (VOC's).

1. Interior "Wet" Surface Painting System: Shall conform to AWWA Standard D102 for Inside Coating System No. 2 (ICS-2) and be acceptable for Potable Water Service by the EPA. Minimum dry film thickness and total dry film thickness shall be per the manufacturer's recommendation. Coating shall meet ANSI/NSF Standard 61 approval for potable water storage.
2. Exterior "Dry" Surface Painting System: Shall conform to AWWA Standard D102 for Outside Coating System No. 6 (OCS-6) and have a minimum dry film thickness and total dry film thickness per the manufacturer's recommendation. Colors of each coat shall be selected by OWNER. Final coat shall be fade-resistant.
3. All lead related work shall be performed in accordance with 29 CFR 1926.62; OSHA Safety and Health Standards for the Construction Industry; applicable publications; applicable NIOSH criteria and procedures; and the contents of this Section.

- C. Full Containment:

The CONTRACTOR shall be fully responsible to ensure that no spent cleaning/blasting hazardous waste debris, dust, overspray, coating droplets, or emissions of any kind, escape to the atmosphere, the base of the tank, adjacent buildings, private property, work sites and parking lots.

1. The containment system shall at a minimum meet the emission control requirements of a Class 2A System as specified in Section 4, 2.2.2 of SSPC-Guide 6 (CON), Guide for Containing Debris Generated During Paint Removal Operations, (Latest Edition). The ground surrounding the tank shall be protected from all debris, emissions, dust, and other materials generated in the cleaning operations with a minimum of two layers of

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polyethylene covered with plywood or the same material used for the perimeter containment system.

2. The CONTRACTOR shall be responsible for all materials that are used and for any apparatus used to contain dust emissions, debris, overspray, and coating droplets.
 - a. The containment system attachments to the tank shall be designed by a Professional Engineer licensed in the State of Virginia not to impose excessive loading on the tank.
 - b. The CONTRACTOR shall submit the P.E. designed, stamped, and signed details (i.e., drawings, load calculations, materials list, etc.) of the containment system on the tank.
 - c. The containment system will place additional loads on the tank that the tank was not originally designed for. The CONTRACTOR shall reinforce the tank as necessary to prevent permanent deformation and to assure that no damage to the tank occurs.
 - d. Any damage to the tank as a direct or indirect result of the containment system shall be repaired or sections replaced by the CONTRACTOR at no additional cost to the OWNER. Neither the OWNER nor the ENGINEER assumes any responsibility for the structural ability of the tank to support the containment system.
3. Complete containment of the tank shall be utilized to contain all cleaning dust, debris, emissions, paint droplets, and paint overspray. The complete containment shall include a full bonnet.
4. If tarps are used as part of the containment system, the tarps shall be an impervious, solid, flame-resistant material, reinforced with a fiber mesh and shall allow as much light as possible to pass through the material.
5. The OWNER reserves the right to stop work or require additional or different containment methods if the CONTRACTOR's operations create a nuisance beyond the tank site property line in the sole opinion of the OWNER, the ENGINEER, the OWNER's designated representative, any regulatory agency, or neighbor. All costs of providing an adequate containment system shall be included by the CONTRACTOR in the Base Bid.
6. If robotic or creeper-type cleaning devices are used, the robotic or creeper-type device shall meet the same containment criteria as that of the types of containment (lack of emissions). All overspray and paint droplets shall be contained on the tank site.
7. Review of the containment system for containing the spent cleaning dust, debris, emissions, overspray, and coating droplets shall not warrant the structural integrity of the containment system and shall not warrant the structural integrity of the tank to support the containment system. Nor shall review of the containment system warrant the ability of the system to contain spent cleaning dust, debris, emissions, and overspray.
8. All attachments to the tank shall include a "reinforcing" pad/plate designed to distribute the loads and to prevent damage to the tank. The reinforcing pad/plate may remain in the tank at the completion of the project as long as the pad/plate is completely seal welded. All edges ground to 1/8 in. minimum radius, and all submittals shall include, at a minimum, the following detail and descriptions.
 - a. Brackets/outriggers to be attached to tank including size, material, etc.

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- b. Bracket/outrigger attachments to the tank.
 - c. Number of brackets/outriggers and spacing on tank container.
 - d. Center roof “tree” and attachment details.
 - e. Reinforcing pad between structure and attachments.
 - f. Any additional roof support.
 - g. Size of cables to be used and locations.
 - h. Anchorage details of hoist and location
 - i. Ground Anchors.
 - j. Catalog cuts of tarp (screen) material.
 - k. Tarp/screen material connection and overlaps.
 - l. Design/operation parameters of containment, such as wind speed when containment shall be lowered or not used.
 - m. Ground Anchors
 - n. Other dust collection and engineering controls
 - o. Any item desired to be left on the tank structure at the completion of the Project (subject to approval by the OWNER).
 - p. Maximum wind velocity which the containment system can remain raised and the procedure for which the containment system will be utilized on forecasted high/gusty wind days
- D. Dust Collection: CONTRACTOR shall furnish, operate, and maintain adequate dust collection during the Project to achieve negative pressure within the containment or adequate “reverse chimney” down-ward air flow within the tank interior during surface preparation and/or spray coating application operations.
- 1. The dust collection system shall at a minimum meet the requirements of a Type J1 Air Filtration system, as specified in Section 5.4.5.1 of the SSPC-Guide 6 (CON), Guide for containing Debris Generated During Paint Removal Operations.
 - 2. The dust collection shall be operated during all abrasive blast cleaning and until the area is clean enough for coating application.
 - 3. The CONTRACTOR shall be responsible for all sizing, design of ductwork, etc., based upon the CONTRACTOR’s operations, number of blasters, duration of blasting, etc.
 - 4. The CONTRACTOR shall also take precautions to avoid a vacuum from developing inside the tank, as even slight vacuum inside of the tank may cause damage to the tank.
- E. Soil Sampling:
- 1. Soil sampling will be performed by the contractor prior to and after tank rehabilitation work to assess any changes in soil lead concentrations at the project site resulting from the work.
 - 2. The cost of pre-tank and post-tank rehabilitation testing of soil samples will be borne by the Contractor. The Contractor will be responsible for collecting the soil samples under the direction of the Engineer or the Engineer’s representative and seeing that the “Chain of Custody Form” is used on the initial and final sampling of the soil.

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3. For purposes of defining the tank site for soil sampling, the site will consist of all land inside the limits of disturbance shown on the Contract Drawings.
4. A soil sample set shall consist of five, $\frac{3}{4}$ -inch diameter by $\frac{1}{2}$ -inch deep sample taken from a 1 square foot area surface location.
5. Pre-Tank Rehabilitation Soil Sampling
 - a. The Contractor, in the presence of the Owner and/or Engineer will remove four (4) sets of soil samples from within the limits of the tank site as directed by Engineer prior to the start of any work at the site.
 - b. The Contractor will identify, label and deliver each sample set to a qualified laboratory, who will have inductively coupled plasma-atomic emission spectrometry analyses (total lead) performed on the soil samples at the contractor's expense.
 - c. The locations where the soil samples are taken will be documented on the plan record drawings.
6. Post-Tank Rehabilitation Soil Sampling
 - a. Upon the determination of Beneficial Use by the Owner, the Contractor, in the presence of the Owner and/or Engineer, will resample four (4) sets of samples at each documented location within the limits of the tank site, label the soil samples, and deliver the soil samples to a qualified laboratory, who will have inductively coupled plasma-atomic emission spectrometry analyses (total lead) performed on the soil samples at the contractor's expense.
 - b. Depending on the initial and final total lead level, the contractor will be responsible for taking action in accordance with the table below. Soil abatement includes the removal and legal disposal of all contaminated soil and placement of an Owner-approved topsoil and ground cover over the abated area.

Initial Total Lead Levels in Soil, "Initial" (mg/kg)	Final Total Lead Levels in Soil, "Final" (mg/kg)	Required Action by Contractor
Initial < 5,000	Final < 5,000	none
Initial < 5,000	5,000 < Final	Abatement of Soil
5,000 < Initial	5,000 < Final	none

- F. Waste Handling and Disposal: The CONTRACTOR shall contain all waste and process discharge in accordance with the accepted methods for the process and materials that are in abatement.
1. All waste shall be contained, and characteristics determined in accordance with EPA regulations found under 40CFR216 Subpart B-Criteria for identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste and applicable VDH/DEQ regulations.
 2. If the waste is not a hazardous waste under the regulations that govern and is eligible for disposal in a city landfill, it shall be the CONTRACTOR's responsibility to properly load, secure, transport, and dispose of all such waste.
 3. If the waste is found to have one (1) of the eight (8) characteristics of hazardous waste or

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to be a listed hazardous waste, the CONTRACTOR shall secure the materials and containerize them providing labels and markings in accordance with the EPA, VDH, DEQ, and DOT regulations.

4. The CONTRACTOR will take responsibility for and dispose of the waste if it is determined to be a regulated hazardous waste. Cost associated with disposal of hazardous waste shall be included in the CONTRACTOR's bid and shall be considered subsidiary to the various pay items shown in the Bid Proposal.

1.05. SUBMITTALS

- A. Environmental Controls: The CONTRACTOR shall submit to the ENGINEER a written plan describing environmental humidity and temperature climate controls for the tank interior. Submittal shall include equipment type, size, and power requirements. This submittal shall be for informational purposes only. Review of this submittal shall not constitute approval of the proposed method nor place any responsibility for the same upon the ENGINEER.
- B. Full Containment: CONTRACTOR shall submit to the ENGINEER a written plan describing the type and performance of the proposed shrouding method.
 1. Performance data shall include time required to raise and lower shroud and containment efficiency.
 2. This submittal shall be for informational purposes only. Review of this submittal shall not constitute approval of the proposed method nor place any responsibility for the same upon the ENGINEER.
- C. Blast Cleaning: CONTRACTOR shall submit to the ENGINEER a written plan describing the materials and methods proposed for use in blast cleaning. A separate submittal shall be made for each method proposed.
- D. Waste Testing (TCLP), Temporary Storage, Transport, and Landfill Disposal: Contractor shall submit to the Engineer a written plan describing the equipment and steps to be employed during the rehabilitation operations to contain, test, transport, and dispose of the waste materials in accordance Federal, State, and Local requirements.
- E. Health and Safety Program: Contractor shall submit to the Engineer a written plan describing the Contractor's work safety & health protocols and equipment for the protection of its employees and the public during the Lead Based Paint Removal Rehabilitation Project.
- F. CONTRACTOR'S PROJECT SUPERVISOR & AIR SAMPLING PROFESSIONAL:
 1. The Contractor will provide a competent Project Supervisor who is SSPC C3/C5 certified, who will be present on site at all time during all Lead Based Paint abatement activities. This individual will be thoroughly familiar and experienced with Lead Based Paint-removal equipment, procedures, and Federal, State and Local as well as other applicable regulatory requirements.
 2. The Contractor will provide a Certified Industrial Hygienist, on site at all times during which Lead Based Paint removal is being performed to confirm compliance with applicable OSHA regulations.
 - a. The Certified Industrial Hygienist's primary function is to continuously observe via visual inspections with the unaided eye for visible emissions emitted from the lead work area. The Certified Industrial Hygienist will document daily work activities and recommendations pertaining to the lead removal work.

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- b. Field notes shall be maintained by the Certified Industrial Hygienist as the permanent in-house record of on-site coverage and sampling services.
 - c. The Certified Industrial Hygienist will observe, be aware of, and comment on general work site conditions which relate to the profession of industrial hygiene.
- G. Paint: CONTRACTOR shall submit to the ENGINEER manufacturer's technical information including paint label analysis and application instructions for each material to be used. In addition, CONTRACTOR shall submit color samples for review of color and texture. CONTRACTOR shall submit Certificate of Approval from the manufacturer stating their ability to apply the interior lining system.
- H. Paint Substitutions: As part of the proof of equality, the ENGINEER may require at the cost of the CONTRACTOR certified reports from a nationally known reputable and independent testing laboratory conducting comparative tests as directed by the ENGINEER between the product specified and the requested substitution. Two (2) comparative tests shall have been made within two (2) years prior to award of contract.
- I. Welding Certification: Welding procedures and welding operators shall be qualified in accordance with AWWA D100.
- J. Overspray Plan: CONTRACTOR shall submit a written plan to the OWNER describing the measures to be taken to prevent oversprays, should they occur. The CONTRACTOR shall acknowledge in this submittal that any damage caused by overspray to the Town's property and neighboring property shall be the responsibility of the CONTRACTOR.
- K. General: The CONTRACTOR shall submit to the ENGINEER, prior to substantial completion of the project, certification from the manufacturer indicating that the quantity of each coating purchased was sufficient to properly coat all surfaces. Such certification shall make reference to the square footage figures provided to the manufacturer and the ENGINEER by the CONTRACTOR.

1.06. QUALITY ASSURANCE

- A. Qualification of Bidders: Each CONTRACTOR bidding this work shall be a specialist in the painting and rehabilitation of welded steel, fluted-steel column elevated storage tanks, multi-legged elevated storage tanks, welded steel ground storage tanks and water facilities.
- B. The following Coating Manufacturers are approved Coating Manufacturers, in no particular order. Products from other Coating Manufacturers shall not be submitted and will not be considered.
 - 1. TNEMEC
 - 2. Sherwin Williams
 - 3. Carboline

1.07. DELIVERY, STORAGE AND HANDLING

- A. All materials shall be brought to the job site in the original sealed and labeled containers of the paint manufacturer and shall be subject to inspection by the ENGINEER on the job.
- B. The CONTRACTOR shall use one (1) convenient location for keeping all materials and doing all mixing, etc. Oily rags and waste shall be frequently removed, and under no circumstances shall they be allowed to accumulate.
- C. All empty paint containers shall remain on the job site until such time as painting is complete

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and shall be subject to inspection by the ENGINEER on the job. Storage and disposal of empty paint containers must comply with VDH regulations.

- D. Paint shall be stored in a secured area in compliance with paint manufacturer's recommendation.

1.08. JOB CONDITIONS

- A. No paint shall be applied when the surrounding air temperature, as measured in the shade, is below 40 degrees Fahrenheit. No paint shall be applied when it can be anticipated that the temperature will drop below 40 degrees Fahrenheit within 18 hours after the application of the paint. No paint shall be applied when the temperature of the surface is below 50 degrees Fahrenheit or within 5 degrees Fahrenheit of the dew point, whichever is greater. Paint shall not be applied to wet or damp surfaces, and shall not be applied in rain, snow, fog or mist, or when the relative humidity exceeds 85 percent. Dew or moisture condensation should be anticipated, and, if such conditions are prevalent, painting shall be delayed until surfaces are dry. Paint shall not be applied to surfaces which are hot enough to cause blistering or pinholing of the film. Refer to manufacturer's recommendations for the interior lining system and its recommended air temperature.
- B. If the paint manufacturer's requirements are more stringent, the CONTRACTOR shall follow them instead.
- C. During periods of inclement weather, painting may be continued by enclosing the surface with temporary shelters and applying artificial heat provided allowable environmental conditions as described above can be maintained.

1.09. WARRANTY

- A. A contractor's representative shall be made available for an inspection annually for two (2) years from the date of final acceptance of the project by the OWNER at no cost to the OWNER. The maintenance and/or warranty period stipulated within the contract documents shall remain in force.
- B. CONTRACTOR shall issue to the OWNER a two-year warranty for workmanship and materials from final acceptance. The CONTRACTOR's Performance Bond may be used to assure this work but will require Surety's acknowledgement prior to commencement of work on the project.
- C. Coating Manufacturer shall issue to the OWNER a fifteen-year warranty for exterior coating. Coating Manufacturer shall issue to the OWNER a five-year warranty for all other materials. Coating Manufacturer shall provide OWNER Maintenance Bond or fiscal surety assuring product work.

1.10. MAINTENANCE MATERIAL

- A. At the end of the project before final payment, the CONTRACTOR shall provide the OWNER coating manufacturer's or coating supplier's vouchers equivalent in value to five (5) one (1) gallon cans of each type and color of coating, primer, thinner, and other coatings used in the field including multiple component materials.
- B. Upon request by OWNER, the material shall be delivered in unopened, typed-labeled cans (including color, batch number and manufacturer date), just as it comes from the factory.
- C. If the coating manufacturer does not package the material in one (1) gallon cans, and in the case of special colors, the materials may be delivered in new larger containers, properly

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closed with typed, color, batch numbers and manufacturer date.

- D. The coating manufacturer's directions for use and literature describing the materials shall also be furnished to the OWNER in three (3) bound copies and a typed inventory list shall be furnished at the time of delivery.
- E. These vouchers shall remain valid for **10-years** from date of issuance, date of issuance not to occur before Substantial Completion.

PART 2 - PRODUCTS

2.01. GENERAL

A. Tank Paint:

- 1. The steel storage tank shall be painted with a minimum 3-coat epoxy system on the Interior "Wet" Surfaces, a minimum 2-coat epoxy touch-up system on the Interior "Dry" Surfaces, and a minimum 3-coat zinc-rich polyurethane/epoxy/polyurethane system on the Exterior "Dry" Surfaces.
- 2. All welds and edges of steel members will be strip coated by brush with each coat of paint prior to spray application of each coat. The exception will be the prime coat which should be sprayed immediately following blasting.

2.02. TANK COATING SYSTEM

A. Interior "Wet" Surfaces:

1. TNEMEC System

- a. 1st Coat: Tnemec Series N140 Pota-Pox® Plus, color 00WH Tnemec White at 3.0-5.0 dry mils. Approved thinner: 41-4 Thinner (Cold Weather App Series N140F).
- b. 2nd Coat: Tnemec Series N140 Pota-Pox® Plus, color 1255 Beige at 3.0-5.0 dry mils. Approved thinner: 41-4 Thinner (Cold Weather App Series N140F).
- c. 3rd Coat: Tnemec Series N140 Pota-Pox® Plus, color 15BL Tank White at 4.0-6.0 dry mils. Approved thinner: 41-4 Thinner (Cold Weather App Series N140F).
- d. Total Dry Film Thickness of the Interior "Wet" Surface epoxy system shall range from a minimum of 10.0 dry mils to a maximum of 16.0 dry mils.
- e. Interior "Wet" Surface coating system shall be VDH and NSF approved.

2. Sherwin Williams System

- a. 1st Coat: Sherwin Williams MacroPoxy® 646 PW, color B58LX600 Light Blue at 3.0-5.0 dry mils. Approved thinner: R7K15 Thinner.
- b. 2nd Coat: Sherwin Williams MacroPoxy® 646 PW, color B58HX610 Buff at 4.0-6.0 dry mils. Approved thinner: R7K15 Thinner.
- c. 3rd Coat: Sherwin Williams MacroPoxy® 646 PW, color B58WX610 Mill White at 5.0-7.0 dry mils. Approved thinner: R7K15 Thinner.
- d. Total Dry Film Thickness of the Interior "Wet" Surface epoxy system shall range from a minimum of 12.0 dry mils to a maximum of 18.0 dry mils.
- e. Interior "Wet" Surface coating system shall be VDH and NSF approved.

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3. Carboline System

- a. 1st Coat: Carboline Carboguard® 891 VOC, color 0700 Light Gray at 4.0-6.0 dry mils. Approved thinner: #225E Thinner.
- b. 2nd Coat: Carboline Carboguard® 891 VOC, color 0100 Light Blue at 4.0-6.0 dry mils. Approved thinner: #225E Thinner.
- c. 3rd Coat: Carboline Carboguard® 891 VOC, color 0800 White at 4.0-6.0 dry mils. Approved thinner: #225E Thinner.
- d. Total Dry Film Thickness of the Interior “Wet” Surface epoxy system shall range from a minimum of 12.0 dry mils to a maximum of 17.0 dry mils.
- e. Interior “Wet” Surface coating system shall be VDH and NSF approved.

B. Exterior “Dry” Surfaces:

1. TNEMEC System

- a. 1st Coat: Tnemec Series 94-H₂O Hydro-Zinc® at 2.5-3.5 dry mils. Approved thinner: 41-49 or 41-3.
- b. 2nd Coat: Tnemec Series N69 Hi-Build Epoxoline® II, color 25BL Fountain Bleu at 2.0-3.0 dry mils. Approved thinner: 41-4 Thinner (Cold Weather App Series N69F).
- c. 3rd Coat: Tnemec Series 1074U Endura-Sheild® II, color 00WH Tnemec White at 2.0-3.0 dry mils. Approved thinner: 41-49 or 41-42 Thinner (Cold Weather App Series 44-710).
- d. Total Dry Film Thickness of the Exterior “Dry” Surface system shall range from a minimum of 6.5 dry mils to a maximum of 9.5 dry mils.
- e. Exterior Tank Lettering – Two coats: Tnemec Series 700 HydroFlon® at 2.0-3.0 dry mils. Approved thinners: 41-63 Thinner (Cold Weather App Utilize Series 44-710).

2. Sherwin Williams System

- a. 1st Coat: Sherwin Williams Corothane® Galvapak 2K at 2.0-4.0 dry mils. Approved thinner: R7K15 Thinner.
- b. 2nd Coat: Sherwin Williams MacroPoxy® 646 PW, color Ultra White at 3.0-5.0 dry mils. Approved thinner: R7K15 Thinner.
- c. 3rd Coat: Acrolon™ 218HS, color SW4062 Spillway at 3.0-6.0 dry mils. Approved thinner: R7K15 Thinner.
- d. Total Dry Film Thickness of the Exterior “Dry” Surface system shall range from a minimum of 8.0 dry mils to a maximum of 15.0 dry mils.
- e. Exterior Tank Lettering – Two coats: Sherwin Williams Fluorokem™ HS at 2.0-3.0 dry mils. Approved thinner: R7K111 Thinner.

3. Carboline System

- a. 1st Coat: Carboline Carbozinc® 859 at 3.0-5.0 dry mils. Approved thinner: #2 Thinner.
- b. 2nd Coat: Carboline Carboguard 893, 0800 White at 4.0-6.0 dry mils. Approved thinner: #2 Thinner.

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- c. 3rd Coat: Carboline Carbothane® 134 HG, color 2805 Safety White 2.0-3.0 dry mils. Approved thinner: #214 Thinner.
- d. Total Dry Film Thickness of the Exterior “Dry” Surface system shall range from a minimum of 9.0 dry mils to a maximum of 14.0 dry mils.
- e. Exterior Tank Lettering – Two coats: Carboline Carboxane® 950 VOC at 2.0-3.0 dry mils. Approved thinner: #214 Thinner.

C. Logo:

1. The CONTRACTOR shall provide the Town of Smithfield logos generally in the same location on the tank as the existing logos. Logo is approximately 26’ wide and 10’ tall. After proper curing of the finish exterior coat, the logos shall be reapplied in additional coats of fluorourethane in the appropriate thickness for the fluorourethane used. The CONTRACTOR shall verify that these dimensions are appropriate in comparison to the size of the existing logo prior to any work being done on the logo. The OWNER shall approve the final colors for the logo from color charts submitted by the CONTRACTOR. The CONTRACTOR shall prepare a mock-up board, on-site, for the OWNER to review and approve prior to beginning this work. The colors used and their corresponding RGB numbers are:

Red: 181-18-27

Gold: 191-146-39

Teal: 0-140-157

Dark Blue: 21-7-145

Black: 0-0-0



D. Substitutions

1. No substitutions shall be considered that decrease the film thickness, the number of coats, the surface preparation or the generic type of coating specified. Approved manufacturers must furnish the same color selection as the manufacturers specified including accent color in all coating systems.

E. Joints

1. All joints between structural members and shell or two structural members shall be sealed with CIM 1061 membrane or approved equal.

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2.03. EQUIPMENT

- A. Agitator: The CONTRACTOR shall provide a suitable mechanical agitator and shall agitate all paint until proper dispersion of materials is secured. All paint ingredients shall be in a satisfactory dispersed condition at the time of application. Use equipment that conforms to the paint manufacturer's requirements.

2.04. MATERIALS

- A. Blast Cleaning Abrasives: Blasting shall be done with an abrasive material of non-silica composition. This abrasive material shall be clean, dry, and free of clay particles and other extraneous matter. The abrasive material must be approved by the OWNER's representative before blasting begins.
- B. Compressed Air used for blasting shall be free of detrimental amounts of water and oil. Adequate traps and separators shall be provided at the compressor. Oil and water separators shall be drained on a regular basis as warranted by atmospheric relative humidity conditions, but no less than once daily.
- C. Rust Inhibitor compatible with the coating systems shall be included in water for wet blasting.

PART 3 - EXECUTION

The CONTRACTOR and all workmen employed by him shall conduct all operations in a clean and sanitary manner and in conformance with all aspects of the General Conditions. CONTRACTOR shall at all times provide dust and overspray controls for blasting and painting operations. Coating application procedures shall conform to the standards of craftsmanship as discussed in the Steel Structures Painting Manual, Volume 1 "Good Painting Practice."

3.01. SURFACE PREPARATION

- A. All surfaces shall be prepared in accordance with the paint manufacturer's recommendations and as a minimum shall be cleaned free of all old paint, rust, corrosion, mill scale, oil and grease. During the cleaning or other operations inside the structure, all interior controls, floats, cathodic wiring, etc., to remain must be protected from damage, and a cover shall be provided over the entrance of all pipes to prevent foreign matter from entering the pipes.
- B. Prior to the interior surfaces being cleaned to the specified SSPC – SP10, "Near White Blast Cleaning" standard, they shall be pre-cleaned to the equivalent of an SSPC – SP7, "Brush-Off Blast Cleaning. Following SSPC - SP7 cleaning, tank shall inspected by the Owner and/or Inspector for any required structural repairs, and these areas shall be so marked as to enable repairs to be made. Such repairs include, but are not limited to, pitting, leaks at welded seams, existing penetrations, roof structure connections, overflow weir, and structural roof rafters. Epoxy seam sealer shall be used to seal all pits, cracks, and crevices which are not 100% sealed against moisture intrusion. Such places shall include, but not limited to, the structural roof supports and bolt connections.
- C. Spot Cleaning: All rust, peeled or cracked paint, overspray, runs, sags and non-adherent paint shall be removed. All exposed edges of the remaining paint shall be feathered, and spot cleaning shall be conducted in a manner to minimize damage to sound material. All foreign matter shall be removed from seams, pickets, joints and the bottom of the columns and plates.
- D. In the case of new appurtenance construction, the CONTRACTOR has the following option:

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the surface preparation may be done by blast cleaning and primer immediately following. The cleaning and priming shall be done in the shop. All paint, primers and paint thinners, including primer for shop-primed components, shall be from the same approved manufacturer.

- E. All surfaces to be painted shall receive a final brush blast immediately before applying the initial coating. The time limit between final blasting and initial coating shall be in accordance with the manufacturer's recommendations, and in no case shall this time period exceed two (2) hours.

3.02. REPAIRS

- A. The surface preparation requirements that must be followed for all welding and grinding work are in NACE SP0178-2007, "Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service".
- B. The welders shall be certified in conformance with ASME Section IX or AWS D1.1 (Tests as described in AWS B2.1) and shall submit current copies of the welders' certification records to the Engineer and the Owner.
- C. Pit and Seam Welding: Pit and seam welding shall include all pits and seams with a depth equal to or greater than 1/8 of an inch. All other corrosion shall be repaired and seams re-welded as necessary to prevent future leaks and to protect the integrity of the coating system.
- D. Surface Grinding: The CONTRACTOR shall grind and round all sharp edges.
- E. Weld Grinding: All welds shall be continuous, ground to a curve and free of porosity, pockets, high spots, rough projections and ripples to provide a coatable surface. All welds shall be blended smoothly into plate surface. All weld slag, splatter and flux shall be removed prior to blasting.

3.03. APPLICATION

- A. Ventilation: The CONTRACTOR must provide adequate reverse chimney effect forced air ventilation while painting or coating the interior surfaces of a tank. The ventilation shall be adequate to remove fumes, prevent the possibility of an accumulation of volatile gases, protect workmen and prevent damage to the tank. The CONTRACTOR shall be held financially responsible for all damage to the tank caused by inadequate ventilation.
- B. Mixing: **Splitting paint kits and mixing of partial kits is not allowed.** Mix only whole kits and discard any leftover paint. Mixing of all coatings must be performed in strict compliance with the manufacturer's recommendations.
- C. General Application: All paint and finishing materials shall be applied by skilled workmen and shall be brushed or sprayed in even, thorough coats without runs, crazing, sags or other blemishes. All coats, regardless of material, shall be thoroughly dry before applying succeeding coats. Full drying time as recommended by the manufacturer of the particular paint involved shall be allowed between coats. All products shall be applied in strict accordance with the manufacturer's recommendations. Painting systems shall be applied by one or more of the following described methods. However, spray application will not be permitted for exterior surfaces unless the CONTRACTOR contains overspray by a method acceptable to the ENGINEER. Application equipment shall meet manufacturer's recommendations.
- D. Brush Application: Only top-quality hog hair or synthetic bristle brushes shall be used. All paint shall be applied so as to form a uniform film of a thickness which is consistent with the

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specified coverage for the paint being used. Sufficient cross brushing shall be used to insure filling of all surface irregularities and complete coverage. Particular care shall be used in painting corners and other restricted places to obtain uniform application. All final brushing strokes shall be made in the same direction and toward the previously applied paint.

- E. Roller Application: Rollers used for applying coatings shall be of the highest quality and must be kept as clean as possible at all times. Any coating rolled on must form a uniform film and must give the same end results as a brushed-on coat. Rolling shall be supplemented by brushing in areas where rolling could not give complete coverage, such as corners, edges, welds, crevices, bolts, rivets or other irregular surfaces.
- F. Spray Application: When paint is applied by spraying, the air gun used shall be adjustable for regulation of the air and paint mixture. The equipment shall have a suitable water trap to remove moisture present in the compressed air. Paint pots shall be equipped with a hand agitator to keep the paint well mixed. All equipment shall be thoroughly cleaned at the end of each day's work. The width of the spray shall be not less than twelve (12) inches or more than eighteen (18) inches. The pressure shall be suitable for type of paint used. Frequent checks shall be made to ensure maintenance of correct spreading rate; care shall be taken to see that edges, corners, and bolt heads are completely covered, and that there has been no bridging over the film. Airless spray application is acceptable with prior approval of the ENGINEER. The interior shall be applied with a plural component spray equipment. The plural component spray equipment shall be of the same type and setup used for certification of the CONTRACTOR to apply the product.
- G. Cleanup: At the completion of the work, the CONTRACTOR shall clean off all paint spots, oil and stains from surfaces and leave the entire project in a satisfactory condition. Special attention shall be given to the tank foundation in that it shall be protected at all times from paint splatter. Any overlapping of the paint onto the concrete shall be cleaned by grinding or other methods as approved by the ENGINEER.

3.04. STRIPE COAT –INTERIOR AND EXTERIOR SURFACES

- A. See PART 2 – PRODUCTS for stripe coat material. All coatings shall be NSF certified (for storage tank interior applications), applied by brush and thinned according to written coating manufacturer's recommendations applied to all welds, weld seams, and tack welds (new and old), edges, bolts, rivets, ladder rails and rungs, seamed corners, joints of any kind and locations where brackets, lugs and other difficult to coat surfaces. Stripe coat on all welds and weld seams shall extend two (2) inches minimum, below and beyond all welded sections.

Stripe coat shall occur in coating system layering as stated in PART 2 – PRODUCTS.

- B. Stripe coat is accomplished by moving the brush back and forth in a scrubbing motion working primer into all crevices. Stripe-coat shall be performed with a high-quality bristle brush using primer that has been thinned according to manufacturer's instructions. Bristles left on the surface shall be removed before the coating dries. If bristles are discovered after the coating has dried, the bristle shall be removed, the coating removed, and the area correctly re-coated at no additional cost to the OWNER.
- C. Stripe coating shall be tinted such that it can be easily distinguished from the other coats.

3.05. DEHUMIDIFICATION

- A. Dehumidification equipment shall be used to control the environment in the reservoir wet area and roof 24 hours a day during blast cleaning, coating application and coating cure.

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Approved automatic real time monitoring equipment shall be provided. This equipment shall be used when no CONTRACTOR personnel are on site.

- B. Dehumidification equipment may be used to control the environment in the pedestal, dry riser and dry well 24 hours a day during blast cleaning, coating application and coating cure. If the CONTRACTOR uses dehumidification to control the environment in the pedestal, dry riser and dry well, the CONTRACTOR shall furnish dehumidification at his expense.
- C. Desiccant dehumidifiers are required and will be a solid desiccant design having a single rotary desiccant wheel capable of fully automatic continuous operation. No liquid, granular, or loose lithium chloride drying systems will be accepted. The desiccant wheel shall be made of a fire-retardant material tested to ASTM standard E 84-90. Air conditioning units may be used only if in combination with Desiccant units to control temperature.
- D. The CONTRACTOR shall furnish all labor, materials, equipment, fabrication and quality control inspections, and all other incidentals required to control and maintain the environment of the reservoir within the parameters stated in this specification and shall incorporate these and any other expenses into his bid.
- E. The Owner reserves the rights, in the event the dehumidification equipment is not performing to the minimum requirements stated in this specification, to require the CONTRACTOR to modify and or add additional equipment to satisfy the conditions of this specification, at the sole cost to the CONTRACTOR. It is the CONTRACTOR's responsibility to provide adequate dehumidification equipment to meet this specification and Coating Manufacturer's requirements.
- F. Coating Manufacturer's minimum limits of surface temperature, interior reservoir air temperature and relative humidity requirements shall govern if more stringent than the requirements stated within this Specification:

Surface Temperature:

- 1. Abrasive cleaning operations:
 - a. Dew point- minimum of 17 degrees below the surface temperature of the reservoir interior.
- 2. Coating operations:
 - a. Surface temperatures shall be maintained at a minimum of 40° F or the published Coating Manufacturer's recommendations. Coating Manufacturer's recommendations shall govern if minimum temperature required is greater than 40° F. The maximum air and surface temperature shall not exceed the published recommendation of the Coating Manufacturer.
 - b. Dew point- minimum of 17 degrees below the surface temperature of the reservoir interior.
- 3. Coating curing:
 - a. Dew point- minimum of 10 degrees below the surface temperature of the reservoir interior.

Relative Humidity:

- 1. Abrasive cleaning operations:

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- a. The relative humidity of the reservoir inside ambient air shall not exceed 55% RH as measured by a sling psychrometric or another measuring device such as a continuous EMD (electronic monitoring device).
 - b. The reservoir inside ambient air shall be maintained, as stated in the preceding paragraph, until the abrasive cleaning operations have been completed and coating operations have covered all bare substrates.
2. Coating operations:
 - a. During coating operations, the relative humidity of the reservoir inside ambient air shall not exceed 55% RH as measured by a sling psychrometric or another measuring device such as a continuous EMD (electronic monitoring device).
3. Coating curing:
 - a. During coating curing the relative humidity of the reservoir inside ambient air shall not exceed 75% RH as measured by a sling psychrometric or another measuring device such as a continuous EMD (electronic monitoring device).

Air Change:

1. Abrasive cleaning and coating operations:
 - a. The equipment shall be sized so that it is capable of changing the volume of the air inside the entire reservoir a minimum of one (1) time per hour during abrasive blasting and coating operations.
2. Coating curing:
 - a. During coating curing and when no coatings are being applied inside the reservoir the equipment shall be sized so that it is capable of changing the volume of the air inside the entire reservoir a minimum of two (2) times per hour.

Air Distribution:

1. The process air shall be distributed so as to be able to contact the entire reservoir interior. If necessary, special equipment shall be provided to achieve this requirement.
2. To prevent the introduction and distribution of moisture into the controlled environment during the abrasive cleaning operation, air compressors shall be operated with after coolers or deliquescent dryers for moisture removal.
3. Air filtration/dust collectors shall be used in conjunction with the dehumidification equipment during blasting operations.

Power:

1. All desiccant dehumidification units shall be propane powered. However, if sufficient electrical power is available, electrical power may be used. Use of air conditioning to achieve dehumidification is not acceptable.

3.06. DISINFECTION

- A. Prior to placing the tank in service, the structure shall be thoroughly disinfected by spray application of a chlorine and water solution as described in AWWA Specification C652-02, Section 4.3 - Chlorination Method 2.

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1. The **OWNER** shall be notified a minimum of two weeks in advance of proposed date of commencing tank disinfection.
 2. Water and sufficient pressure for flushing, cleaning, initial testing and disinfection shall be supplied by the Owner at no cost to the **CONTRACTOR**.
 3. However, **CONTRACTOR** shall be aware that after tank disinfection, the water used for disinfection may not be able to be placed into the water system and may need to be dechlorinated and discharged from the tank. Any costs associated with de-chlorination and discharge from the tank shall be the sole responsibility of the **CONTRACTOR**.
- B. Following disinfection, the tank shall be filled and sampled by the **CONTRACTOR** for bacteriological testing, prior to being put into service.
1. The testing shall be as described in AWWA Specification C652, latest edition, Section 5.1 – Bacteriological Sampling and Testing. Results of the test shall be reviewed by the Engineer.
 2. Final decision of the suitability of the disinfection procedure shall rest with the Engineer. Should repeat of the disinfection procedure be required, additional cost of disinfection, testing and water to fill the tank shall be borne by the **CONTRACTOR** at no additional cost to the Owner.
- C. **CONTRACTOR** shall be allowed to fill the elevated storage tank once for testing without being required to pay for the water. If the event the tank must be drained and re-fill for any reason, the **CONTRACTOR** will be required to pay for water needed to fill the tank.

3.07. FIELD QUALITY CONTROL

- A. General: All work and materials supplied under this specification shall be subject to inspection by the **OWNER** or its representative. The Engineer shall provide a full-time NACE-Certified Coating inspector.
1. The inspector shall inspect the tank at the shop prior to the application of the first coat of paint for the purpose of insuring that the metal surface has been properly prepared for painting. Inspection shall be verified by the inspector to comply with SSPC VIS 1-89 in conjunction with surface preparation specifications.
 2. The representative shall also inspect and test each primer, intermediate and finish coats to ensure that the paint has been applied correctly and that the dry mil thickness of each coat and the total dry mil thickness have been painted to the hereinabove specified.
 3. The inspector shall maintain daily records of site and weather conditions that can affect the coatings. This includes but is not limited to dew point, humidity, surface temperature and air temperature.
 4. Prior to paint application, the surface preparation shall be inspected for compliance with SSPC-SP10 near white metal with a 1-3 mil surface profile. This surface profile will be measured in at least two locations per 100 sq ft of blasted area using press-o-film surface profile impression tape with an appropriate micrometer.
 5. All parts of the work shall be accessible to the inspector.
 6. The **CONTRACTOR** shall correct such work or replace such material if found defective. Such inspection will not relieve the **CONTRACTOR** of the responsibility of furnishing qualified labor and materials in strict accordance with the specifications.

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- B. Threshold Inspections: At certain stages in the project the CONTRACTOR will not be allowed to proceed until a thorough inspection has been performed by the OWNER's representative and the OWNER's representative has approved the work up to that point. The following threshold inspections will be required:
1. Surface Preparation and Repair Completion: After all repairs have been made and surfaces prepared in accordance with these specifications and the coating manufacturer's instructions. The project site or area to be painted (interior or exterior of tank) shall be cleaned and ready for coating operations to begin.
 2. Completion of Each Coat: After each prime coat application and touch up; when the tank is ready to receive the following coat.
 3. Substantial Completion: When all work and clean up is completed and prior to CONTRACTOR moving equipment and manpower off the job.
 4. The CONTRACTOR will notify the OWNER forty-eight (48) hours in advance of needing threshold inspection. Prior to scheduling the inspection, the CONTRACTOR shall have sufficiently reviewed his work and believe it to be ready for threshold inspection. The cost of additional threshold inspections required because work was not approved at the original threshold inspection will be borne by the CONTRACTOR. The threshold inspections will not relieve the CONTRACTOR of his responsibility to furnish qualified labor and materials in accordance with the specifications.
- C. Quality Control Log: The CONTRACTOR shall maintain a quality control program to include a daily log, and at a minimum, the following quality control checks:
1. Daily compressed air blotter test.
 2. Surface preparation visual checks using SSPC VIS 1-89.
 3. Surface profile checks periodically using Testex Replica Tape.
 4. Wet film thickness, periodically as coating is applied using an approved gauge.
 5. Dry film thickness, daily and periodically as coating dries, using an Elcometer Thickness gauge or equal.
 6. Holidays, daily and periodically as needed using an approved low voltage holiday detector.
 7. Environmental condition, minimum of twice daily, once prior to beginning work and once in the afternoon to include:
 - a. Ambient temperature.
 - b. Dew point and relative humidity using a sling Psychrometer and U.S. Weather Bureau Psychrometric Charts.
 - c. Steel surface temperatures on at least two opposite sides of tank using surface sensing thermometers.
 - d. Wind speed and direction.

The CONTRACTOR's daily log shall be kept on site at all times and be made available for review by the OWNER or OWNER's representative on demand. The daily log shall include as a minimum the following information:

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- Date.
 - Name of CONTRACTOR.
 - Project Name.
 - Person's Name who Makes Log Entry.
 - Specific Progress
 - Areas of tank blasted
 - Repairs made including location
 - Coatings applied and location
 - Touch Up work and location
 - Environmental conditions as listed in Paragraph 3.05.C.7., and the time readings were taken.
 - Locations and results of all quality control checks.
 - Product manufacturer and batch numbers of coatings used that day.
 - Problems encountered and action taken as a result.
- D. Testing Equipment: The CONTRACTOR shall furnish an approved type dry mil gauge apparatus to measure the dry film thickness. The Elcometer Thickness Gauge or equal shall be furnished to the OWNER for his use. The CONTRACTOR shall also furnish to the OWNER, for his use, holiday detector devices. Holiday detector devices shall be approved low-voltage type. All of the above inspection gauges shall be furnished and on the job before the OWNER will permit painting operations to proceed and shall remain on the job until its completion and acceptance. The CONTRACTOR or his representative shall instruct the OWNER on the proper use, care and calibration of all such gauges. The above-required testing gauges and calibration materials shall be furnished to OWNER and are returnable to the CONTRACTOR upon completion of the job. The cost of furnishing all of the above required gauges to the OWNER for his use shall be borne by the CONTRACTOR.
- E. Bacteriological Testing: Following disinfection, the tank shall be filled and sampled by the CONTRACTOR for bacteriological testing, prior to being put into service. The testing shall be as described in AWWA Specification C652-92, Section 4.4 - Bacteriological Sampling and Testing. Results of the test shall be reviewed by the ENGINEER. Final decision upon the suitability of the disinfection procedure shall rest with the ENGINEER. Should repeat of the disinfection procedure be required, additional cost of disinfection, testing and water to fill the tank shall be borne by the CONTRACTOR at no additional cost to the OWNER.

3.08. TESTING/OBSERVATION

- A. Observations shall be conducted by the Owner's Representative or a third-party inspection company and the Owner's Representative. Final observations shall be performed in the presence of the Owner or their Representative and the CONTRACTOR's Superintendent. All materials and equipment used in the accomplishment of testing are subject to observation at any time by the Owner and/or Inspector. Periodic observation times will be agreed upon by the Inspector and CONTRACTOR and approved by the Owner.
- B. The Owner may conduct the tests and observations to verify the Coating Manufacturer's data. If the coating testing results fall below the test requirements or visual observation, the Owner reserves the right to have the CONTRACTOR change coating materials and/or Coating Manufacturers to a coating that will meet ALL the stated requirements in this Specification.
- C. All steps of the coating system will be subject to observation prior to progression to succeeding steps. Phases of observation shall include, but not limited to:
1. Pre-cleaning (before surface preparation) survey of facilities to be primed

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2. During surface preparation and prior to coating application
 3. During and immediately after each coating application
 4. Final coating observation
 5. Pre-disinfection
- D. The CONTRACTOR shall not move or remove scaffolding, ladders or other fixtures necessary to provide proper observation until such work has been observed and approved by the Inspector and/or the Owner's Representative.
- E. Any work found to be deficient, damaged, or otherwise unacceptable shall be repaired in accordance with the Coating Manufacturer's latest written repair recommendations at no additional cost to the Owner.
- F. Owner and Owner's Representative will make every attempt to minimize damage to newly coated areas during observation activities, but any damage caused, regardless of by whom, shall be repaired by the CONTRACTOR at no additional cost to the Owner.
- G. Observation and/or acceptance of CONTRACTOR's work by Owner, Inspector or their Representatives in no way releases CONTRACTOR from any of the terms and conditions of the Contract Agreement.
- H. The following test and observations will be performed:
1. Surfaces of all steel shall first be cleaned and observed by the CONTRACTOR's Superintendent to ensure that all grease, oil, and other foreign materials have been removed before coating. Any area found to be improperly cleaned, shall be redone to the OWNER'S Representative's satisfaction. Final surface preparation shall be as outlined in the Steel Structures Painting Council's Surface Preparation Specifications SSPC SP1 through SP11. Prior to observation of all interior and exterior surfaces by Owner's Representative, CONTRACTOR's Superintendent shall observe and confirm readiness for inspection.
 2. The pattern depth of the abrasive blasted surface shall be as specified by the Coating Manufacturer's written surface profile recommendations, see coating schedule for minimums. The profile shall be measured by a Testex Tape. SSPCVIS- 1 Pictorial Surface Preparation Standards shall serve as guides and in arbitration to determine the degree of surface preparation. Each and every square foot of the reservoir surface interior and exterior shall be prepared as per SSPC visual standards.
 3. Before and/or during blasting and coating operations, a field observation and possibly a field test of ventilation flowrates may be performed by the Owner to verify that the ventilation requirements are being provided.
 4. All waste testing shall be performed by the CONTRACTOR using a third-party inspection company approved by the Owner. Reports shall be submitted to the Owner and approved prior to removal of waste from the site. If the waste is not a hazardous waste under the regulations that govern and is eligible for disposal in a city landfill, it shall be the CONTRACTOR's responsibility to properly load, secure, transport, and dispose of all such waste. The CONTRACTOR shall submit a copy of all waste transportation invoices to the Owner within seven (7) calendar days of waste removal.
 5. If the waste is found to have one (1) of the eight (8) characteristics of hazardous waste or to be a listed hazardous waste, the CONTRACTOR shall secure the materials and

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containerize them providing labels and markings in accordance with the EPA, VDH, DEQ, and DOT regulations. The **CONTRACTOR** will take responsibility for and dispose of the waste if it is determined to be a regulated hazardous waste.

6. Measurement of the dry film thickness shall be made in accordance with SSPCPA2 (latest edition) with magnetic or digital gauges. Measurements of the actual dry film thickness of the various coating layers applied shall be made by the Owner's Representative with assistance from CONTRACTOR. Final film thickness measurements shall be made at such locations as designated by the Owner and/or Owner's Representative.
7. Holiday Testing: Holiday tests shall be performed by the CONTRACTOR on the interior coating system after the Finish Coat has cured for at least 5 days. All interior surfaces shall be tested for pinholes using a wet sponge low voltage holiday detector in accordance with AWWA D102-03 in the presence of the Field Inspector. All touched up pinholes and re-coated areas shall cure for a minimum of seven (7) days prior to re-testing for holidays. During the wet sponge testing, defective areas shall be marked for repair and retested after repair work has been completed. Holiday testing and re-testing shall continue until the interior surfaces are found to be holiday free. A Tinker-Rasor (or equal) Low Voltage Holiday Detector shall be used for all holiday testing. The coating system must pass the holiday test regardless of the mil thickness existing.
8. No pinholes, holidays, or other irregularities will be permitted in the final interior coating inspection.
9. On days when blasting and/or coating is being performed, the CONTRACTOR shall monitor and record ambient climatic conditions, and interior reservoir conditions as follows:
 - a. Air temperature, steel surface temperature, humidity and dew point shall be measured and recorded by the CONTRACTOR prior to beginning of blasting and prior to application of coating, daily. Surface temperature shall be measured using Owner approved thermometers. Temperature of both the sunny side and shady side of the reservoir shall be recorded periodically each day. The reservoir surface temperatures, relative humidity, dry bulb, wet bulb and dew point temperatures, both interior and exterior (as appropriate), are to be recorded at least every (3) three hours. The dew point shall be measured by use of a sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables. The CONTRACTOR shall use a form approved by the Owner for recording this data. The completed forms shall be kept on the job site at all times from the time coating is first applied until the coating system is complete.
10. A minimum of twenty (20), five (5) on each of the interior systems and five (5) on exterior system, maximum of one hundred (100) pull off adhesion tests shall be performed on the reservoir surfaces in compliance with ASTM D-4541. Tests shall be performed on the primer, intermediate and finished coating system. If test results do not meet the criteria of the Coating Manufacturer's written adhesion limits, additional tests will be performed as deemed necessary by the Owner. CONTRACTOR shall repair, to the Owner's satisfaction, all test areas where coating has been damaged and repair all areas where adhesion of coating is below Coating Manufacturer's written adhesion limits. Repairs shall be made by the CONTRACTOR at no additional cost to the Owner. Repair areas will be subject to re-testing and shall continue to be re-tested until the adhesion of the repaired coating meets the stated minimum adhesion limit of the Coating

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Manufacturer. Retest costs, including actual labor and materials, shall be borne by the CONTRACTOR and deducted from the Contract Value by Change Order.

11. All coatings submitted shall pass a 7-day chemical spot test to the following chemicals with no cracking, blistering or delamination.

1, 1, 1 Trichloroethane
Methyl Ethyl Keytone (MK)
Ethanol

3.09. ANNIVERSARY INSPECTION

- A. The CONTRACTOR shall observe all surfaces of the reservoir with the OWNER within 11 to 23 months after the reservoir work has been accepted for Substantial Completion and placed in service. If an observation date has not been established within 23 months after the reservoir has been placed in service, the anniversary observation shall be considered waived, except in the event the OWNER is unable to remove the reservoir from service due to extremely long dry climate conditions or otherwise adverse weather conditions or due to unexpected breakdowns in the distribution system. The date of anniversary observation may be extended for a period of time not to exceed thirty (30) months beyond the date of Final Completion and acceptance of the work.
- B. If failures in any portion of the reservoir surface exceed five (5) percent of that portion, as determined by the OWNER, then for that portion, the entire coating system shall be completely removed, re-coated and re-tested in accordance with the specifications herein. In the event any portion of the reservoir surface requires repair, partial or complete, a second anniversary observation shall be made unless the OWNER otherwise deems it not to be necessary. If subsequent anniversary observations are made, time stipulations, coating removal, repair; re-testing requirements shall be the same as provided for in this Specification. Each subsequent repair will have a warranty observation to occur within 11 to 23 months after the repair is completed.
- C. The OWNER will isolate the reservoir from the distribution system and drain the reservoir. The CONTRACTOR shall open, clean out, high-pressure water wash and rinse the tank prior to the anniversary observation. After observation of the tank is complete and repair work accepted by OWNER, the CONTRACTOR shall follow disinfection procedures specified in section 3.06. Disinfection of the tank, after anniversary observation, shall be by OWNER as described above should CONTRACTOR meet cleanliness requirements.
- D. The CONTRACTOR shall provide suitable and adequate equipment including, lighting, ventilation, rigging, cable climbers, mirrors, inspection equipment, and sufficient man-power to clean, disinfect and move equipment and tools around the tank, etc., as may be necessary to facilitate complete observation of all interior surfaces. The CONTRACTOR shall bear all costs of the anniversary observation and shall incorporate such costs into his bid.
- E. Any location, including but not limited to locations where a coating has peeled off, bubbled, blistered, chipped, or cracked, etc., or where pinholes and/or Holidays are present and locations where rusting or corrosion is evident, will be considered a failure or defect of the coating system and shall be repaired as required. Repairs will be made at areas or locations where coating failures are found, even though metal surfaces may be protected by a cathodic protection system.

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- F. Methods of testing for coating failure which, may or may not be evident, shall include, but not be limited to, adhesion tests, film thickness measurement, Holiday testing, etc. Testing may be non-destructive or destructive. The CONTRACTOR, at his expense, shall repair all areas where destructive tests are performed.
- G. The anniversary repair work shall be completed within an agreed time period as determined by the OWNER and CONTRACTOR. All repairs shall be made as per the Coating Manufacturer's written repair work instructions or that which is approved and acceptable to the OWNER and completed within ninety (90) calendar days of the anniversary observation. Holiday testing will be used to check all reservoir interior coating repairs, including the interior roof.

END OF SECTION

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PART 1 - GENERAL

1.01. DESCRIPTION OF WORK

- A. This item will consist of repair and preparation of surfaces to be painted, application of paint systems, and paint system materials.
- B. The Wilson Road Tank Evaluation Report's state that the existing piping coating system should be treated as lead based.

1.02. REFERENCES

The CONTRACTOR shall adhere to the latest Standards and Codes for work associated with Coating and Recoating as published by the following organizations. In the event there is a conflict between these Specifications and the standards, and codes, these Specifications shall govern. The OWNER's decision shall be final as the interpretation and/or conflict between these Specifications and the referenced standards and codes.

- A. American Society for the Testing of Materials standards and specifications shall be referred to as ASTM.
- B. U.S. Environmental Protection Agency shall be referred to as EPA.
- C. American National Standards Institute shall be referred to as ANSI.
- D. National Sanitary Foundation shall be referred to as NSF.
- E. Occupational Safety and Health Administration shall be referred to as OSHA.
- F. National Association of Corrosion ENGINEERs shall be referred to as NACE.
- G. Code of Federal Regulations shall be designated as CFR.

1.03. DEFINITIONS

- A. Interior Walls shall include – but are not limited to – the underside of the roof, walls, and ladders within the vault.
- B. Interior Floors shall include the floor of the concrete vaults.
- C. Piping Surfaces shall consist of any interior pipes and appurtenances within the vault.
- D. SSPC-SP6, "Commercial Blast Cleaning", NACE 3 is defined as; a surface from which all oil, grease, dirt, mill scale, rust corrosion products, oxides paint, or other foreign matter have been completely removed. Sixty-seven percent of each unit area (9 square inches) of prepared surface shall be free of light shadows, light streaks, or stains left after removal of the items listed above.
- E. ICRI, CSP 3 is defined as; the International Concrete Repair Institute's Concrete Surface Preparation profile 3 (light shortblast).

1.04. SYSTEM DESCRIPTION

- A. Surface Preparation: CONTRACTOR shall prepare all surfaces for painting in accordance with SSPC-SP6, "Commercial Blast Cleaning."
- B. Painting: All paint, primers and paint thinners, including primer for shop primed components, shall be from the same approved manufacturer. All coating systems shall be

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provided with contrasting colors so that subsequent coatings will be easily identified during the coating process.

All Paint shall conform to current state and federal regulations applicable to Volatile Organic Compounds (VOC's).

All lead related work shall be performed in accordance with 29 CFR 1926.62; OSHA Safety and Health Standards for the Construction Industry; applicable publications; applicable NIOSH criteria and procedures; and the contents of this Section.

C. Containment:

The CONTRACTOR shall be fully responsible to ensure that no spent cleaning/blasting hazardous waste debris, dust, overspray, coating droplets, or emissions of any kind, escape to the atmosphere, adjacent buildings, private property, work sites and parking lots.

1. The CONTRACTOR shall be responsible for all materials that are used and for any apparatus used to contain dust emissions, debris, overspray, and coating droplets.
2. The OWNER reserves the right to stop work or require additional or different containment methods if the CONTRACTOR's operations create a nuisance beyond the tank site property line in the sole opinion of the OWNER, the ENGINEER, the OWNER's designated representative, any regulatory agency, or neighbor. All costs of providing an adequate containment system shall be included by the CONTRACTOR in the Base Bid.
3. Review of the containment system for containing the spent cleaning dust, debris, emissions, overspray, and coating droplets shall not warrant the structural integrity of the containment system and shall not warrant the structural integrity of the tank to support the containment system. Nor shall review of the containment system warrant the ability of the system to contain spent cleaning dust, debris, emissions, and overspray.

D. Dust Collection: CONTRACTOR shall furnish, operate, and maintain adequate dust collection during the Project to achieve negative pressure within the containment during surface preparation and/or spray coating application operations.

1. The dust collection system shall at a minimum meet the requirements of a Type J1 Air Filtration system, as specified in Section 5.4.5.1 of the SSPC-Guide 6 (CON), Guide for containing Debris Generated During Paint Removal Operations.
2. The dust collection shall be operated during all abrasive blast cleaning and until the area is clean enough for coating application.
3. The CONTRACTOR shall be responsible for all sizing, design of ductwork, etc., based upon the CONTRACTOR's operations, number of blasters, duration of blasting, etc.

E. Waste Handling and Disposal: The CONTRACTOR shall contain all waste and process discharge in accordance with the accepted methods for the process and materials that are in abatement.

1. All waste shall be contained, and characteristics determined in accordance with EPA regulations found under 40CFR216 Subpart B-Criteria for identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste and applicable VDH/DEQ regulations.
2. If the waste is not a hazardous waste under the regulations that govern and is eligible for disposal in a city landfill, it shall be the CONTRACTOR's responsibility to properly

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load, secure, transport, and dispose of all such waste.

3. If the waste is found to have one (1) of the eight (8) characteristics of hazardous waste or to be a listed hazardous waste, the CONTRACTOR shall secure the materials and containerize them providing labels and markings in accordance with the EPA, VDH, DEQ, and DOT regulations.
4. The CONTRACTOR will take responsibility for and dispose of the waste if it is determined to be a regulated hazardous waste. Cost associated with disposal of hazardous waste shall be included in the CONTRACTOR's bid and shall be considered subsidiary to the various pay items shown in the Bid Proposal.

1.05. SUBMITTALS

- A. Blast Cleaning: CONTRACTOR shall submit to the ENGINEER a written plan describing the materials and methods proposed for use in blast cleaning. A separate submittal shall be made for each method proposed.
- B. CONTRACTOR'S PROJECT SUPERVISOR & AIR SAMPLING PROFESSIONAL:
 1. The Contractor will provide a competent Project Supervisor who is SSPC C3/C5 certified, who will be present on site at all time during all Lead Based Paint abatement activities. This individual will be thoroughly familiar and experienced with Lead Based Paint-removal equipment, procedures, and Federal, State and Local as well as other applicable regulatory requirements.
 2. The Contractor will provide a Certified Industrial Hygienist, on site at all times during which Lead Based Paint removal is being performed to confirm compliance with applicable OSHA regulations.
 - a. The Certified Industrial Hygienist's primary function is to continuously observe via visual inspections with the unaided eye for visible emissions emitted from the lead work area. The Certified Industrial Hygienist will document daily work activities and recommendations pertaining to the lead removal work.
 - b. Field notes shall be maintained by the Certified Industrial Hygienist as the permanent in-house record of on-site coverage and sampling services.
 - c. The Certified Industrial Hygienist will observe, be aware of, and comment on general work site conditions which relate to the profession of industrial hygiene.
- C. Paint: CONTRACTOR shall submit to the ENGINEER manufacturer's technical information including paint label analysis and application instructions for each material to be used. In addition, CONTRACTOR shall submit color samples for review of color and texture. CONTRACTOR shall submit Certificate of Approval from the manufacturer stating their ability to apply the interior lining system.
- D. Paint Substitutions: As part of the proof of equality, the ENGINEER may require at the cost of the CONTRACTOR certified reports from a nationally known reputable and independent testing laboratory conducting comparative tests as directed by the ENGINEER between the product specified and the requested substitution. Two (2) comparative tests shall have been made within two (2) years prior to award of contract.
- E. General: The CONTRACTOR shall submit to the ENGINEER, prior to substantial completion of the project, certification from the manufacturer indicating that the quantity of each coating purchased was sufficient to properly coat all surfaces. Such certification shall

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make reference to the square footage figures provided to the manufacturer and the ENGINEER by the CONTRACTOR.

1.06. DELIVERY, STORAGE AND HANDLING

- A. All materials shall be brought to the job site in the original sealed and labeled containers of the paint manufacturer and shall be subject to inspection by the ENGINEER on the job.
- B. The CONTRACTOR shall use one (1) convenient location for keeping all materials and doing all mixing, etc. Oily rags and waste shall be frequently removed, and under no circumstances shall they be allowed to accumulate.
- C. All empty paint containers shall remain on the job site until such time as painting is complete and shall be subject to inspection by the ENGINEER on the job.
- D. Paint shall be stored in a secured area in compliance with paint manufacturer's recommendation.

1.07. JOB CONDITIONS

- A. No paint shall be applied when the surrounding air temperature, as measured in the shade, is below 40 degrees Fahrenheit. No paint shall be applied when it can be anticipated that the temperature will drop below 40 degrees Fahrenheit within 18 hours after the application of the paint. No paint shall be applied when the temperature of the surface is below 50 degrees Fahrenheit or within 5 degrees Fahrenheit of the dew point, whichever is greater. Paint shall not be applied to wet or damp surfaces, and shall not be applied in rain, snow, fog or mist, or when the relative humidity exceeds 85 percent. Dew or moisture condensation should be anticipated, and, if such conditions are prevalent, painting shall be delayed until surfaces are dry. Paint shall not be applied to surfaces which are hot enough to cause blistering or pinholing of the film. Refer to manufacturer's recommendations for the interior lining system and its recommended air temperature.
- B. If the paint manufacturer's requirements are more stringent, the CONTRACTOR shall follow them instead.
- C. During periods of inclement weather, painting may be continued by enclosing the surface with temporary shelters and applying artificial heat provided allowable environmental conditions as described above can be maintained.

1.08. WARRANTY

- A. A contractor's representative shall be made available for an inspection annually for two (2) years from the date of final acceptance of the project by the OWNER at no cost to the OWNER. The maintenance and/or warranty period stipulated within the contract documents shall remain in force.
- B. CONTRACTOR shall issue to the OWNER a two-year warranty for workmanship and materials from final acceptance. The CONTRACTOR's Performance Bond may be used to assure this work but will require Surety's acknowledgement prior to commencement of work on the project.
- C. Coating Manufacturer shall issue to the OWNER a fifteen-year warranty for exterior coating. Coating Manufacturer shall issue to the OWNER a five-year warranty for all other materials. Coating Manufacturer shall provide OWNER Maintenance Bond or fiscal surety assuring product work.

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1.09. MAINTENANCE MATERIAL

- A. At the end of the project before final payment, the CONTRACTOR shall provide the OWNER coating manufacturer's or coating supplier's vouchers equivalent in value to five (5) one (1) gallon cans of each type and color of coating, primer, thinner, and other coatings used in the field including multiple component materials.
- B. Upon request by OWNER, the material shall be delivered in unopened, typed-labeled cans (including color, batch number and manufacturer date), just as it comes from the factory.
- C. If the coating manufacturer does not package the material in one (1) gallon cans, and in the case of special colors, the materials may be delivered in new larger containers, properly closed with typed, color, batch numbers and manufacturer date.
- D. The coating manufacturer's directions for use and literature describing the materials shall also be furnished to the OWNER in three (3) bound copies and a typed inventory list shall be furnished at the time of delivery.
- E. These vouchers shall remain valid for **10-years** from date of issuance, date of issuance not to occur before Substantial Completion.

PART 2 - PRODUCTS

2.01. GENERAL

- A. Paint:
 - 1. The vaults' interior floor shall be painted with a minimum 3-coat system. The vaults' walls and piping shall be painted with a minimum 2-coat system.
 - 2. Any welds will be strip coated by brush with each coat of paint prior to spray application of each coat. The exception will be the prime coat which should be sprayed immediately following blasting.

2.02. VAULT COATING SYSTEM

- A. Interior Walls:
 - 1. Fill any large cracks, voids, or other surface imperfections, as needed, with Tnemec Series 215, or approved equal.
 - 2. 1st Coat: Tnemec Series N69 Epoxoline®, color 54GR Insulation Gray, at 6.0-8.0 dry mils, or approved equal.
 - 3. 2nd Coat: Tnemec Series N69 Epoxoline®, color 54GR Insulation Gray at 6.0-8.0 dry mils, or approved equal.
- B. Piping System:
 - 1. 1st Coat: Tnemec Series N69 Epoxoline®, color 13BL Ports Mouth, at 6.0-8.0 dry mils, or approved equal.
 - 2. 2nd Coat: Tnemec Series N69 Epoxoline®, color 13BL Ports Mouth at 6.0-8.0 dry mils, or approved equal.
- C. Interior Floors:
 - 1. Fill any large cracks, voids, or other surface imperfections, as needed, with Tnemec Series 215, or approved equal.

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2. 1st Coat: Tnemec Series 201 Epoxoprime®, color 54GR Insulation Gray, at 8.0-12.0 dry mils, or approved equal.
3. 2nd Coat: Tnemec Series 280 Tneme-Glaze®, color 54GR Insulation Gray at 8.0-12.0 dry mils, or approved equal.
4. 3rd Coat: Tnemec Series 248 Everthane ®, color 54GR Insulation Gray at 2.0-3.0 dry mils, or approved equal.

2.03. EQUIPMENT

- A. Agitator: The CONTRACTOR shall provide a suitable mechanical agitator and shall agitate all paint until proper dispersion of materials is secured. All paint ingredients shall be in a satisfactory dispersed condition at the time of application. Use equipment that conforms to the paint manufacturer's requirements.

2.04. MATERIALS

- A. Blast Cleaning Abrasives: Blasting shall be done with an abrasive material of non-silica composition. This abrasive material shall be clean, dry, and free of clay particles and other extraneous matter. The abrasive material must be approved by the OWNER's representative before blasting begins.
- B. Compressed Air used for blasting shall be free of detrimental amounts of water and oil. Adequate traps and separators shall be provided at the compressor. Oil and water separators shall be drained on a regular basis as warranted by atmospheric relative humidity conditions, but no less than once daily.
- C. Rust Inhibitor compatible with the coating systems shall be included in water for wet blasting.

PART 3 - EXECUTION

The CONTRACTOR and all workmen employed by him shall conduct all operations in a clean and sanitary manner and in conformance with all aspects of the General Conditions. CONTRACTOR shall at all times provide dust and overspray controls for blasting and painting operations.

3.01. SURFACE PREPARATION

- A. All surfaces shall be prepared in accordance with the paint manufacturer's recommendations and as a minimum shall be cleaned free of all old paint, rust, corrosion, mill scale, oil and grease. During the cleaning or other operations inside the structure, all interior controls, wiring, etc., to remain must be protected from damage, and a cover shall be provided over the entrance of all pipes to prevent foreign matter from entering the pipes.
- B. Interior Walls:
 1. Brush off, abrasive blast with fine abrasive to uniformly scarify surface.
- C. Piping System:
 1. SSPC-SP6, "Commercial Abrasive Blast"
- D. Interior Floors:
 1. Abrasive blast, shot-blast, water jet or mechanically abrade to provide a minimum ICRI-CSP 3 or greater.

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- E. Spot Cleaning: All rust, peeled or cracked paint, overspray, runs, sags and non-adherent paint shall be removed. All exposed edges of the remaining paint shall be feathered, and spot cleaning shall be conducted in a manner to minimize damage to sound material. All foreign matter shall be removed from seams, pickets, joints and the bottom of the columns and plates.
- F. In the case of new appurtenance construction, the CONTRACTOR has the following option: the surface preparation may be done by blast cleaning and primer immediately following. The cleaning and priming shall be done in the shop. All paint, primers and paint thinners, including primer for shop-primed components, shall be from the same approved manufacturer.
- G. All surfaces to be painted shall receive a final brush blast immediately before applying the initial coating. The time limit between final blasting and initial coating shall be in accordance with the manufacturer's recommendations, and in no case shall this time period exceed two (2) hours.

3.02. APPLICATION

- A. Ventilation: The CONTRACTOR must provide adequate ventilation to remove fumes, prevent the possibility of an accumulation of volatile gases, protect workmen and prevent damage to the vault. The CONTRACTOR shall be held financially responsible for all damage caused by inadequate ventilation.
- B. Mixing: **Splitting paint kits and mixing of partial kits is not allowed.** Mix only whole kits and discard any leftover paint. Mixing of all coatings must be performed in strict compliance with the manufacturer's recommendations.
- C. General Application: All paint and finishing materials shall be applied by skilled workmen and shall be brushed or sprayed in even, thorough coats without runs, crazing, sags or other blemishes. All coats, regardless of material, shall be thoroughly dry before applying succeeding coats. Full drying time as recommended by the manufacturer of the particular paint involved shall be allowed between coats. All products shall be applied in strict accordance with the manufacturer's recommendations. Painting systems shall be applied by one or more of the following described methods.
- D. Brush Application: Only top-quality hog hair or synthetic bristle brushes shall be used. All paint shall be applied so as to form a uniform film of a thickness which is consistent with the specified coverage for the paint being used. Sufficient cross brushing shall be used to insure filling of all surface irregularities and complete coverage. Particular care shall be used in painting corners and other restricted places to obtain uniform application. All final brushing strokes shall be made in the same direction and toward the previously applied paint.
- E. Roller Application: Rollers used for applying coatings shall be of the highest quality and must be kept as clean as possible at all times. Any coating rolled on must form a uniform film and must give the same end results as a brushed-on coat. Rolling shall be supplemented by brushing in areas where rolling could not give complete coverage, such as corners, edges, welds, crevices, bolts, rivets or other irregular surfaces.
- F. Spray Application: When paint is applied by spraying, the air gun used shall be adjustable for regulation of the air and paint mixture. The equipment shall have a suitable water trap to remove moisture present in the compressed air. Paint pots shall be equipped with a hand agitator to keep the paint well mixed. All equipment shall be thoroughly cleaned at the end of each day's work. The width of the spray shall be not less than twelve (12) inches or more than eighteen (18) inches. The pressure shall be suitable for type of paint used. Frequent

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checks shall be made to ensure maintenance of correct spreading rate; care shall be taken to see that edges, corners, and bolt heads are completely covered, and that there has been no bridging over the film. Airless spray application is acceptable with prior approval of the ENGINEER.

- G. Cleanup: At the completion of the work, the CONTRACTOR shall clean off all paint spots, oil and stains from surfaces and leave the entire project in a satisfactory condition.

3.03. FIELD QUALITY CONTROL

- A. General: All work and materials supplied under this specification shall be subject to inspection by the OWNER or its representative. The Engineer shall provide a full-time NACE-Certified Coating inspector.
1. The inspector shall inspect the surfaces prior to the application of the first coat of paint for the purpose of insuring that the surface has been properly prepared for painting.
 2. The representative shall also inspect and test each coat to ensure that the paint has been applied correctly and that the dry mil thickness of each coat and the total dry mil thickness have been painted to the hereinabove specified.
 3. The inspector shall maintain daily records of site and weather conditions that can affect the coatings. This includes but is not limited to dew point, humidity, surface temperature and air temperature.
 4. All parts of the work shall be accessible to the inspector.
 5. The CONTRACTOR shall correct such work or replace such material if found defective. Such inspection will not relieve the CONTRACTOR of the responsibility of furnishing qualified labor and materials in strict accordance with the specifications.
- B. Threshold Inspections: At certain stages in the project the CONTRACTOR will not be allowed to proceed until a thorough inspection has been performed by the OWNER's representative and the OWNER's representative has approved the work up to that point. The following threshold inspections will be required:
1. Surface Preparation and Repair Completion: After all repairs have been made and surfaces prepared in accordance with these specifications and the coating manufacturer's instructions. The project site or area to be painted (interior or exterior of tank) shall be cleaned and ready for coating operations to begin.
 2. Completion of Each Coat
 3. Substantial Completion: When all work and clean up is completed and prior to CONTRACTOR moving equipment and manpower off the job.
 4. The CONTRACTOR will notify the OWNER forty-eight (48) hours in advance of needing threshold inspection. Prior to scheduling the inspection, the CONTRACTOR shall have sufficiently reviewed his work and believe it to be ready for threshold inspection. The cost of additional threshold inspections required because work was not approved at the original threshold inspection will be borne by the CONTRACTOR. The threshold inspections will not relieve the CONTRACTOR of his responsibility to furnish qualified labor and materials in accordance with the specifications.
- C. Quality Control Log: The CONTRACTOR shall maintain a quality control program to include a daily log, and at a minimum, the following quality control checks:

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1. Daily compressed air blotter test.
2. Surface preparation visual checks.
3. Surface profile checks periodically using Testex Replica Tape.
4. Wet film thickness, periodically as coating is applied using an approved gauge.
5. Dry film thickness, daily and periodically as coating dries, using an Elcometer Thickness gauge or equal.
6. Environmental condition, minimum of twice daily, once prior to beginning work and once in the afternoon to include:
 - a. Ambient temperature.
 - b. Dew point and relative humidity using a sling Psychrometer and U.S. Weather Bureau Psychrometric Charts.
 - c. Steel surface temperatures on at least two opposite sides of tank using surface sensing thermometers.
 - d. Wind speed and direction.

The CONTRACTOR's daily log shall be kept on site at all times and be made available for review by the OWNER or OWNER's representative on demand. The daily log shall include as a minimum the following information:

- Date.
 - Name of CONTRACTOR.
 - Project Name.
 - Person's Name who Makes Log Entry.
 - Specific Progress
 - Areas of tank blasted
 - Repairs made including location
 - Coatings applied and location
 - Touch Up work and location
 - Environmental conditions as listed in Paragraph 3.05.C.7., and the time readings were taken.
 - Locations and results of all quality control checks.
 - Product manufacturer and batch numbers of coatings used that day.
 - Problems encountered and action taken as a result.
- D. Testing Equipment: The CONTRACTOR shall furnish an approved type dry mil gauge apparatus to measure the dry film thickness. The Elcometer Thickness Gauge or equal shall be furnished to the OWNER for his use. The inspection gauges shall be furnished and on the job before the OWNER will permit painting operations to proceed and shall remain on the job until its completion and acceptance. The CONTRACTOR or his representative shall instruct the OWNER on the proper use, care and calibration of all such gauges.

3.04. TESTING/OBSERVATION

- A. Observations shall be conducted by the Owner's Representative or a third-party inspection company and the Owner's Representative. Final observations shall be performed in the presence of the Owner or their Representative and the CONTRACTOR's Superintendent. All materials and equipment used in the accomplishment of testing are subject to observation at

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any time by the Owner and/or Inspector. Periodic observation times will be agreed upon by the Inspector and CONTRACTOR and approved by the Owner.

- B. The Owner may conduct the tests and observations to verify the Coating Manufacturer's data. If the coating testing results fall below the test requirements or visual observation, the Owner reserves the right to have the CONTRACTOR change coating materials and/or Coating Manufacturers to a coating that will meet ALL the stated requirements in this Specification.
- C. All steps of the coating system will be subject to observation prior to progression to succeeding steps. Phases of observation shall include, but not limited to:
 - 1. Pre-cleaning (before surface preparation) survey of facilities to be primed
 - 2. During surface preparation and prior to coating application
 - 3. During and immediately after each coating application
 - 4. Final coating observation
- D. Any work found to be deficient, damaged, or otherwise unacceptable shall be repaired in accordance with the Coating Manufacturer's latest written repair recommendations at no additional cost to the Owner.
- E. Owner and Owner's Representative will make every attempt to minimize damage to newly coated areas during observation activities, but any damage caused, regardless of by whom, shall be repaired by the CONTRACTOR at no additional cost to the Owner.
- F. Observation and/or acceptance of CONTRACTOR's work by Owner, Inspector or their Representatives in no way releases CONTRACTOR from any of the terms and conditions of the Contract Agreement.
- G. The following test and observations will be performed:
 - 1. Before and/or during blasting and coating operations, a field observation and possibly a field test of ventilation flowrates may be performed by the Owner to verify that the ventilation requirements are being provided.
 - 2. All waste testing shall be performed by the CONTRACTOR using a third-party inspection company approved by the Owner. Reports shall be submitted to the Owner and approved prior to removal of waste from the site. If the waste is not a hazardous waste under the regulations that govern and is eligible for disposal in a landfill, it shall be the CONTRACTOR's responsibility to properly load, secure, transport, and dispose of all such waste. The CONTRACTOR shall submit a copy of all waste transportation invoices to the Owner within seven (7) calendar days of waste removal.
 - 3. If the waste is found to have one (1) of the eight (8) characteristics of hazardous waste or to be a listed hazardous waste, the CONTRACTOR shall secure the materials and containerize them providing labels and markings in accordance with the EPA, VDH, DEQ, and DOT regulations. The **CONTRACTOR** will take responsibility for and dispose of the waste if it is determined to be a regulated hazardous waste.
 - 4. Measurement of the dry film thickness shall be made in accordance with SSPCPA2 (latest edition) with magnetic or digital gauges. Measurements of the actual dry film thickness of the various coating layers applied shall be made by the Owner's Representative with assistance from CONTRACTOR. Final film thickness measurements shall be made at such locations as designated by the Owner and/or Owner's Representative.

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5. No pinholes or other irregularities will be permitted in the final interior coating inspection.
6. On days when blasting and/or coating is being performed, the CONTRACTOR shall monitor and record ambient climatic conditions, and interior reservoir conditions as follows:
 - a. Air temperature, surface temperature, humidity and dew point shall be measured and recorded by the CONTRACTOR prior to beginning of blasting and prior to application of coating, daily. Surface temperature shall be measured using Owner approved thermometers. The surface temperatures, relative humidity, dry bulb, wet bulb, and dew point temperatures are to be recorded at least every (3) three hours. The dew point shall be measured by use of a sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables. The CONTRACTOR shall use a form approved by the Owner for recording this data. The completed forms shall be kept on the job site at all times from the time coating is first applied until the coating system is complete.

3.05. ANNIVERSARY INSPECTION

- A. The CONTRACTOR shall observe all surfaces of the vaults with the OWNER within 11 to 23 months after the reservoir work has been accepted for Substantial Completion. If an observation date has not been established within 23 months after Substantial Completion, the anniversary observation shall be considered waived, except in the event the OWNER is unable to remove the reservoir from service due to extremely long dry climate conditions or otherwise adverse weather conditions or due to unexpected breakdowns in the distribution system. The date of anniversary observation may be extended for a period of time not to exceed thirty (30) months beyond the date of Final Completion and acceptance of the work.
- B. If failures in any portion of the reservoir surface exceed five (5) percent of that portion, as determined by the OWNER, then for that portion, the entire coating system shall be completely removed, re-coated and re-tested in accordance with the specifications herein. In the event any portion of the vault surface requires repair, partial or complete, a second anniversary observation shall be made unless the OWNER otherwise deems it not to be necessary. If subsequent anniversary observations are made, time stipulations, coating removal, repair; re-testing requirements shall be the same as provided for in this Specification. Each subsequent repair will have a warranty observation to occur within 11 to 23 months after the repair is completed.
- C. The CONTRACTOR shall bear all costs of the anniversary observation and shall incorporate such costs into his bid.
- D. Any location, including but not limited to locations where a coating has peeled off, bubbled, blistered, chipped, or cracked, etc., or where pinholes are present and locations where rusting or corrosion is evident, will be considered a failure or defect of the coating system and shall be repaired as required.
- E. Methods of testing for coating failure which, may or may not be evident, shall include, but not be limited to, adhesion tests, film thickness measurement, etc. Testing may be non-destructive or destructive. The CONTRACTOR, at his expense, shall repair all areas where destructive tests are performed.
- F. The anniversary repair work shall be completed within an agreed time period as determined by the OWNER and CONTRACTOR. All repairs shall be made as per the Coating

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Manufacturer's written repair work instructions or that which is approved and acceptable to the OWNER and completed within ninety (90) calendar days of the anniversary observation.

END OF SECTION

SECTION 901

INSURANCE REQUIREMENTS ATTACHMENT E

Insurance: The contractor shall maintain adequate liability insurance, which shall protect and hold harmless the Town of Smithfield, Virginia, and its officials from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under workers' compensation laws. The contractor shall furnish proof of insurance prior to commencement of services. Separate forms which name the Town as additional insured must be included with the Certificate of Insurance.

The Commonwealth of Virginia requires all contractors and subcontractors who perform work on behalf of the Town to obtain and maintain workers' compensation insurance. Evidence of coverage needs to be provided prior to commencement of work.

Contractor shall have ten (10) days from notice of intent to award to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the Town to award a contract to the next responsive bidder, and hold the original contractor liable for excess costs.

TYPE OF INSURANCE COVERAGE

LIMITS

- 1 a. *Workers' Compensation* and
b. *Employer's Liability*

Statutory
\$500,000 each accident
\$500,000 each employee
\$500,000 policy limit

The contractor will maintain workers' compensation coverage in compliance with the laws of the Commonwealth of Virginia. The coverage must have statutory limits and be with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. As an alternative, it is acceptable for the contractor to be insured by a group self-insurance association that is licensed by the Virginia Bureau of Insurance. The contractor will also carry employers liability insurance with a limit of at least \$500,000 bodily injury by accident/\$500,000 bodily injury by disease policy limit/\$500,000 bodily injury by disease each employee.

2. *General Liability* including XCU
& Contractual Liability

\$1,000,000 each Occurrence
\$2,000,000 Aggregate

The contractor will maintain a general liability policy with \$1,000,000 combined single limits. Coverage is to be on an occurrence basis with an insurer licensed to conduct business in the Commonwealth of Virginia. The insurer must have an A. M. Best rating of A- or better. The insurer must list the Town of Smithfield as an additional insured. The endorsement must be issued by the insurance company. The contract must state the insurance provided in the additional insured endorsement is primary without contribution from other insurance available to the additional insured. A notation on the certificate of insurance referencing the additional insured status is not sufficient.

3. *Professional Liability*

\$1,000,000 each Occurrence

It is preferred that the coverage be on an occurrence basis. If the policy is on a claims made basis, this should be noted. If the contractor has professional liability insurance on a claims made basis, agreement must be made that coverage will be maintained for at least three years beyond the expiration date of the policy in force at the time of this contract. Coverage is to be with a company licensed to conduct business in the Commonwealth of Virginia and have an A. M. Best rating of A- or better.

Exceptions may be made to these terms and limits. However, all exceptions must be presented in a clear manner to the Town of Smithfield prior to the acceptance of the contract/bid. Exceptions will be run through the Town attorney and/or the Town's insurance carrier.

SECTION 902

GENERAL TERMS AND CONDITIONS

Probation Period:

There shall be a 90-day probation period starting from time of execution of the contract. During this time the Town may cancel the contract at any time for any reason. Verbal and written notification with cause for cancellation will be provided to the contract provider.

Cancellation:

After the probation period, the Town may cancel and terminate any resulting contract for poor contractor performance, in part or in whole, without penalty, upon 60 days written notice to the contractor. Any contract cancellation notice shall not relieve the contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.

Public Notice of Award:

Public notice of award will be posted on eVA VBO (eva.virginia.gov) and on the Town website (www.smithfieldva.gov).

Payment and Invoices:

All invoices shall have a payment of net 30 days. All invoices over \$10,000 require Town Council approval and must be submitted by the 15th of each month in order to be included on current month's committee agenda.

Contractual Disputes:

Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after receipt of final payment; however, written notice of the contractor's intention to file a claim shall be given at the time of the occurrence or at the beginning of the work upon which the claim is based.

No written decision denying a claim or addressing issues related to the claim shall be considered a denial of the claim unless the written decision is signed by the public body's chief administrative officer or his designee. The contractor may not institute legal action prior to receipt of the final written decision on the claim unless the public body fails to render a decision within 90 days of submission of the claim. Failure of the public body to render a decision within 90 days shall not result in the contractor being awarded the relief claimed or in any other relief or penalty. The sole remedy for the public body's failure to render a decision within 90 days shall be the contractor's right to institute immediate legal action.

A contractor may not invoke administrative procedures meeting the standards of § 2.2-4365, if available, or institute legal action as provided in § 2.2-4364, prior to receipt of the public body's decision on the claim, unless the public body fails to render such decision within the time specified in the contract or, if no time is specified, then within the time provided by subsection C (§ 2.2-4363). A failure of the public body to render a final decision within the time provided in subsection C shall be deemed a final decision denying the claim by the public body.

The decision of the public body shall be final and conclusive unless the contractor appeals within six months of the date of the final decision on the claim by the public body by invoking administrative procedures meeting the standards of § 2.2-4365, if available, or in the alternative by instituting legal action as provided in § 2.2-4364.

Applicable Laws and Courts:

This solicitation and any resulting contract shall be governed in all respects by the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the Circuit Court of Isle of Wight County. The parties are encouraged to resolve any issues in controversy arising from the award of this contract or any contractual dispute using Alternative Dispute Resolution (ADR) procedures as provided for in Section 2.2-4366 of the Code of Virginia (1950, as amended). The contractor shall comply with all applicable federal, state and local laws, rules and regulations.

Anti-Discrimination:

The Contractor is prohibited from engaging in employment discrimination and must comply fully with the provisions of the Code of Virginia, Section 2.2-4311 (1950, as amended). The Town of Smithfield does not discriminate on the basis of race, sex, age, handicap, national origin or faith/religious affiliation.

By submitting their proposals/bids, offerors/bidders certify to the Town that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and Section 2.2-4311 of the Virginia Public Procurement Act (VPPA). If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. See Code of Virginia, § 2.2-4343(1)(E).

In every contract over \$10,000, the provisions in (1) and (2) below apply:

1 During the performance of this contract, the Contractor agrees as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the contract, will state that such Contractor is an equal opportunity employer.
- c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

- d. The requirements of these provisions 1. and 2. are a material part of the contract. If the Contractor violates one of these provisions, the Town may terminate the affected part of this contract for breach, or at its option, the whole contract. Violation of one of these provisions may also result in debarment from State contracting regardless of whether the specific contract is terminated.
 - e. in accordance with Executive Order 61 (2017), a prohibition on discrimination by the contractor, in its employment practices, subcontracting practices, and delivery of goods or services, on the basis of race, sex, color, national origin, religion, sexual orientation, gender identity, age, political affiliation, disability, or veteran status, is hereby incorporated in this contract.
- 2 The Contractor will include the provisions of (1) above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each Sub-Contractor or vendor.

Nondiscrimination of Contractors:

A bidder, offeror, or contractor shall not be discriminated against in the solicitation or award of this contract because of race, religion, color, sex, national origin, age, or disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the bidder or offeror employs ex-offenders unless the state agency, department or institution has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services, or disbursements provided pursuant to this contract objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services, or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services, or disbursements from an alternative provider.

Ethics in Public Contracting:

By submitting their bids/proposals, bidders/offerors certify that their bids/proposals are made without collusion or fraud and they have not offered or received any kickbacks or inducements from any other bidder/offeror, supplier, manufacturer or subcontractor in connection with their proposal/bid, and they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

The bidder/offerer shall identify any actual or potential conflicts of interest that exist, or which may arise if the offeror is recommended for award, and propose how such conflicts might be resolved.

By his/her signature on the documents submitted, each bidder/offeror attest that his/her agents and/or employees, to the best of his/her knowledge and belief, have not in any way colluded with anyone for and on behalf of the offeror, or themselves, to obtain information that would give the offeror an unfair advantage over others, nor has he/she colluded with anyone for and on behalf of the bidder/offeror, or itself, to gain any favoritism in the award of this contract.

Immigration Reform and Control Act of 1986:

By submitting their proposals/bids, offerors/bidders certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

Debarment Status:

By participating in this procurement, the vendor certifies that they are not currently debarred by the Commonwealth of Virginia from submitting a response for the type of goods and/or services covered by this solicitation. Vendor further certifies that they are not debarred from filling any order or accepting any resulting order, or that they are an agent of any person or entity that is currently debarred by the Commonwealth of Virginia.

Antitrust:

By entering into a contract, the contractor conveys, sells, assigns, and transfers to the Town of Smithfield all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and Town of Smithfield, relating to the particular goods or services purchased or acquired by Town of Smithfield under said contract.

Default:

In case of failure to deliver goods or services in accordance with the contract terms and conditions, the Town of Smithfield, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which the Town may have.

Drug-Free Workplace:

During the performance of this contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Sub-Contractor or vendor. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract

Payment Requirements:

All contracts awarded by any agency of local government require the following action to be taken by contractors:

- a Within seven days after receipt of amounts paid for work performed by the subcontractor under that contract:
 - 1 pay the subcontractor for the proportionate share of the total payment received from the agency attributable to the work performed by the subcontractor under that contract; or
 - 2 notify the agency and subcontractor, in writing, of his intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
 - 3 A subcontractor may contact the contracting agency concerning non-payment and non-notification by the prime contractor. The subcontractor has to show proof that it has not been paid by providing supportive document.
- b If an individual contractor, provide social security number in order to receive payment.
- c If a proprietorship, partnership or corporation, provide federal employer identification number.
- d Pay interest to subcontractors on all amounts owed by the contractor that remain unpaid after seven days following receipt by the contractor of payment from the agency for work performed by the subcontractor under that contract, except for amounts withheld as allowed in (2) above.
- e Interest shall accrue at the rate of one percent per month.
- f To include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

NOTE: A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the Town of Smithfield. A contract modification may not be made for the purpose of providing reimbursement for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

Background Checks:

The Town of Smithfield reserves the right to request sufficient information from any and all contracted service providers to allow law enforcement background checks on employees working on Town property and public right-of-ways

Qualifications of Contractor:

The Town may make such reasonable investigations as deemed proper and necessary to determine the ability of the bidder/offeror to perform the services/furnish the goods and the bidder/offeror shall furnish to the Town all such information and data for this purpose as may be requested. The Town reserves the right to inspect bidder/offeror's physical facilities prior to award to satisfy questions regarding the bidder/offeror's capabilities. The Town further reserves the right to reject any bid/proposal, if as the evidence submitted by, or investigations of, such bidder/offeror fails to satisfy the Town that such bidder/offeror is properly qualified to carry out obligations of this contract and to provide the services and/or furnish the good contemplated therein.

Licensing:

Contractor shall maintain all license and certifications required by applicable federal, state, and local government entities for provision of the goods and services provided under this contract.

Testing and Inspection:

The Town reserves the right to conduct any test/inspection if may deem advisable to assure goods and services conform to the specifications.

Assignment of Contract:

A contract shall not be assignable by the contractor in whole or in part without written consent by the Town.

Subcontractors:

The Contractor's attention is called to the requirement that not more than fifty percent (50%) of the work shall be subcontracted and the amount of any subcontractors proposed by the contractor in excess of ten percent (10%) of the proposal price shall be identified.

Availability of Funds:

It is understood and agreed between the parties herein that the Town shall be bound hereunder only to the extent of the funds or which may hereafter become available for the purpose of this agreement.

Authorization to Conduct Business in the Commonwealth:

A contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the *Code of Virginia* or as otherwise required by law. Any business entity described above that enters into a contract with a public body pursuant to the *Virginia Public Procurement Act* shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the contract. A public body may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

W-9 Request for Taxpayer Identification Number and Certification:

The Town of Smithfield is required by IRS regulations to issue Forms 1099 to qualifying companies and individuals. The attached W-9 forms must be submitted with your bid/proposal package to ensure compliance with all IRS reporting obligations.

SECTION 903

SPECIAL TERMS AND CONDITIONS

Award of Contract

The Town will award this contract to the lowest responsive and responsible bidder consistent with the Virginia Public Virginia Public Procurement Act Section 2.2-4300. Contract awards may be made to more than one bidder if in its sole discretion is deemed to be in the best interest of the Town.

The Town reserves the right to waive minor non-substantive errors in the bid, to reject any/or all bids, to award any bid in whole or in part and award the bid considered to be in the best interest of the Town. The Town also reserves the right to negotiate with the lowest responsive, responsible Bidder should bid exceed available funds.

Virginia State Corporation Commission Identification Number:

Pursuant to Code of Virginia, §2.2-4311.2 subsection B, an Offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its proposal the identification number issued to it by the State Corporation Commission (SCC). Any Offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its proposal a statement describing why the Offeror is not required to be so authorized. Indicate the above information on the SCC Form provided. Contractor agrees that the process by which compliance with Titles 13.1 and 50 is checked during the solicitation stage (including without limitation the SCC Form provided) is streamlined and not definitive, and the Town's use and acceptance of such form, or its acceptance of Contractor's statement describing why the Offeror was not legally required to be authorized to transact business in the Commonwealth, shall not be conclusive of the issue and shall not be relied upon by the Contractor as demonstrating compliance.

Notice to Proceed:

A Notice to Proceed is required prior to construction and will include special instructions or revisions to the construction schedule, effective date, contract completion date and the name of the individual charged with the responsibility for the project on behalf of the Town of Smithfield. *It is the responsibility of the contractor to obtain all permits and necessary authorizations from any applicable agencies.*

Mobilization:

The Town of Smithfield at this time does not pay for upfront cost incurred by a contractor to start a project. The Town pays for projects at the time of completion of the work.

Acceptance and Final Approval:

All projects, regardless of size will require a final inspection before acceptance. The contractor, by his own comprehensive inspection, will determine when all work is completed and all other contract requirements are fulfilled. The contractor then notifies the PM to request a Pre-Final Inspection (PFI). Upon receiving the PFI

request, but before scheduling the PFI, the PM will tour the project site with the Inspector to determine that the contractor's request is based on a project site that is indeed substantially complete. Substantial completion is defined as the point at which, in the opinion of the PM, the project is essentially complete and available for the Town's beneficial use. If the project has not attained substantial completion the contractors request for the PFI will be denied until the contract work is actually completed.

If the contractors request for a PFI is granted, the inspection will be arranged by the PM so that the representatives of the contractor and town staff can attend. During the inspection, the PM will discuss any identified incomplete work, unacceptable work or defects requiring correction with the contractor and compile a substantial completion punch list. The substantial completion punch list will be delivered to the contractor and will include the date of the completion.

After the contractor has completed all the items presented on the Substantial Completion Punch List, a final inspection of the project will be requested. The PM will perform the final inspection with a contractor representative to verify that all items on the punch list have been completed and that the project is completed according to the approved contract documents and applicable plans. If a final inspection reveals uncorrected deficiencies the PFI procedure will be repeated, at the contractor's expense, until an acceptable final completion walk-through has been accomplished.

Once the PM has verified that the contractor has satisfactorily completed the project, a notice of completion and acceptance will be sent to the contractor. The notice will include date of final completion for the contract and establish the beginning of the warranty period. Upon completion of the contract work and receipt of the notice of completion, the contractor will prepare and submit a request for final payment to the PM. The PM will review the request for final payment and if approved, request for final payment is submitted the Treasurer's Office.

Guaranteed Work and Warranty Period:

The warranty period will begin on the final completion date and shall be effective for one calendar year unless otherwise stipulated by the final contract. Accordingly, as the end of the warranty period approaches, the PM will send the contractor a Notice of Warranty Inspection which identifies a time and location for the final warranty inspection to begin. Following the final warranty inspection and depending on whether or not defects are identified for correction, the PM will send a Release from Warranty (no defects noted) or a Release from Warranty (noted defects corrected), to the contractor stating that the contract is released of further responsibility for any warranty on the project. In cases where warranty items are identified for correction, additional final warranty inspections will be scheduled until all defective work is corrected to the satisfaction of the PM.

Small, Women, and Minority-Owned Businesses (SWaM):

The Town of Smithfield recognizes and acknowledges the importance of small, women-owned, and minority-owned businesses and the challenges they face to compete in the open market. The Town is committed to cooperating with prevailing law as it contributes to the preservation and strengthening of such businesses.

For those contracts in which prime contractors have made SWaM commitments, the Town will record those SWaM businesses in a database as a means to track and identify such businesses. The prime contractor will be required to provide information regarding expenditures to second-tier SWaM businesses that were utilized on the specific contract. The prime contractor must provide the name of the second-tier firm, business classification of the firm (e.g. minority-owned), and the dollar amount paid. The reported information will be

compared with the prime contractor's commitment to determine whether the prime contractor is fulfilling its contractual obligations.

Prime contractors will calculate expenditures with SWaM businesses on a monthly basis and report to the Virginia Department of Small Business and Supplier Diversity (DSBSD) on a quarterly basis.

Payments are withheld for prime contractors who fail to report information on a timely basis (until the information is reported). Prime contractors that do not meet their SWaM commitments may be held in contractual default.

Prime Contractor Responsibilities:

The contractor shall be responsible for completely supervising and directing work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime contractor. The contractor agrees that he is fully responsible for the negligent acts and omissions of their subcontractors and of persons employed by them as he is for the negligent acts and omissions of his own employees.

Use of Recycled Materials:

Notwithstanding the prohibition against used, damaged or obsolete items, contractors are encouraged to use secondary or recycled materials in the manufacture of products to the maximum extent practicable without jeopardizing the performance of intended end use of the product unless such use is precluded due to health and welfare or safety requirements or product specifications contained herein.

Owner's Right to Terminate the Contract for Cause:

- a If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, the Town may terminate this contract. If the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Sub-Contractor or suppliers of material or labor, or persistently disregards laws, ordinances, or the written instruction of the Town, or otherwise be guilty of a substantial violation of any provision of the contract, then the Town may terminate the contract.
- b Prior to termination of the contract, the Town shall give the Contractor and his surety ten (10) calendar days written notice, during which the Contractor and/or his surety may rectify the cause of the termination. If rectified to the satisfaction of the Town within said ten (10) days, the Town may rescind the notice of termination. If it does not, the termination for cause shall become the effective at the end of the ten-day (10) notice period. In the alternative, the Town may postpone the effective date of the termination notice, at their sole discretion, if they should receive reassurances from the contractor and/or its surety that the causes of termination will be remedied in a time and manner acceptable to the Town. If at any time more than ten (10) days after the notice of termination, the Town determines that Contractor and/or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Town may immediately terminate the contract for cause by giving written notice to the Contractor and its surety. In no event

shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.

- c Notice of terminations, whether initial or given after a period of postponement, may be served upon the Contractor and the surety by mail or any other means at their last known places of business in Virginia or elsewhere, by delivery to any officer or management/supervisory employee of either wherever they may be found, or, if no such officer, employee or place of business is known or can be found by reasonable inquiry within three (3) days, by posting the notice at the job site. Failure to accept or pick up registered or certified mail addressed to the last known address shall be deemed to be delivery.
- d Upon termination of the contract, the Town shall take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method the Town may deem expedient. In such case the Contractor shall not be entitled to receive any further payment. If the expense of finishing the work, including compensation for additional managerial and administrative services shall exceed the unpaid balance of the contract price, the Contractor shall pay the difference to the Town, together with any other expenses of terminating the contract and having it completed by others.
- e If it should be judicially determined that the Town improperly terminated this contract for cause, then the termination shall be deemed to be a termination for the convenience of the Town.
- f Termination of the contract under this section is without prejudice to any other right or remedy of the Town.

Termination by Owner for Convenience:

- a The Town may terminate this contract at any time without cause, in whole or in part, upon giving the Contractor notice of such termination. Upon such termination, the Contractor shall immediately cease work and remove from the project site all of its labor forces and such of its materials as the Town elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as the Town may require to assign to the Town the Contractor's interest in all subcontracts and purchase orders designated by the Town. After all such steps have been taken to the Town's satisfaction; the Contractor shall receive as full compensation for termination and assignment the following:
 - 1 All amounts then otherwise due under the terms of this contract,
 - 2 Amounts due for work performed subsequent to the latest Request for Payment through the date of termination; and
 - 3 Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination. The Contractor shall not be entitled to any compensation for lost profits or for any other type of contractual compensation or damage other than those provided by the preceding sentence. Upon payment of the foregoing, the Town shall have no further obligations to the Contractor of any nature.
- b In no event shall termination for the convenience of the Town terminate the obligations of the Contractor's surety on its payment and performance bonds.

SECTION 904



Safety Program Acknowledgement

It is the responsibility of each of our contractors to read, understand, and adhere to the Town of Smithfield Workplace Safety Program. If there are contents of the program that are unclear or need further discussion it is the contractor's responsibility to ask for clarification. Please be sure that each section of the policy/program is reviewed thoroughly and understood.

I have been fully advised of the Town of Smithfield Workplace Safety Program and agree that I will comply with these requirements while working on site. In addition, I also agree to provide copies of our safety training program (including training records and OSHA 300 Logs) if requested by the Town.

(Contractor Employee Signature)

(Printed Name)

(Date)

(Town Contract Officer Signature)

(Printed Name)

(Date)

(Contractor Business/Company Name)

SECTION 906

COMPLIANCE WITH DAVIS-BACON ACT

The contractor and its subcontractors shall comply with provisions of the Davis-Bacon Act and Related Acts. Federal minimum wage laws are applicable to all construction contracts in excess of \$2,000. The Davis-Bacon Act stipulates that all laborers and mechanics employed by the contractor or subcontractors on federally assisted projects shall be paid wages at rates not less than those prevailing on similar construction in the area as determined by the Secretary of Labor. The contractor and its subcontractors shall comply with provisions of the Contract Work Hours and Safety Standards Act generally applicable to any contracts in excess of \$100,000.

Wage rates specified in the applicable wage determination (included as Attachment 907) for this construction trade and geographic area are required as part of this contract. The wage determination(s) must be posted at the site of the work in a prominent and accessible place.

The contractor will also post the Department of Labor poster "Employee Rights under the Davis-Bacon Act" (www.wagehours.dol.gov).

The contractor or subcontractor shall insert in any subcontract the clauses included in 29 CFR 5.5 (a)(1) through (12) (Contract Provisions and Related Matters) including the applicable wage rates, and a clause requiring the subcontractor include these clauses in any lower tier subcontract. The prime contractor will be responsible for compliance by any subcontractor or lower tier subcontractor with all contract clauses in 29 CFR 5.5 (see Department of Labor website or a Federal regulations website).

By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm for which has an interest in the contractor's firm is disbarred or suspended from bidding or working on a federally funded project. No part of this contract will be subcontracted to any person or firm who has been disbarred or suspended from bidding or working on a federally funded project.

Any class of laborers or mechanics employed under the contract, which is not listed in the wage determination shall be classified in conformance with the wage decision if possible. Additional classifications shall be requested from the Department of Labor as specified in 29 CFR 5.5 or as amended (see Department of Labor Website for forms and instructions). Upon issuance of an additional classification, the new wage rate including fringe benefits where appropriate shall be paid to all workers performing the work in additional classification from the first day on which work is performed in the classification. The Department of Labor shall approve an additional classification and wage rate and fringe benefits only when the following criteria have been met:

- The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- The classification is utilized in the area by the construction industry; and
- The proposed wage rate, including bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

1. Payroll(s)

All mechanics and laborers employed upon the site of the work will be paid unconditionally and not less than once a week without subsequent deduction or rebate on any account the full amounts of wages and bona fide fringe benefits or cash equivalents thereof except as provided for by the Department of Labor regulations issued in accordance with provisions of the Copeland Act. The payment shall be computed at wage rates not less than those contained in the "wage determination" included in these specifications regardless of any contractual relationship alleged to exist between the contractor or its subcontractors and such laborers and mechanics.

Each contractor and subcontractor shall furnish each week, in which any contract work is performed, to the loan recipient (owner) a payroll of wages paid to each of its employees engaged on work during the preceding weekly payroll period. The payroll submitted shall set out accurately and completely all of the information required to be maintained in the Records section below. Each payroll* submitted shall be accompanied by a Statement of Compliance* signed by the contractor or subcontractor or his/her agent who pays and supervises the payment of persons employed under the contract and shall certify the following:

- That the payroll for the payroll period contains the information noted above and that such information is true and complete,
- That such laborer or mechanic employed on the contract during the payroll period has been paid the full weekly wage earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in federal regulation(s), and
- That each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

*DOL WHD Form 347 (Attachment 908) is included as an example payroll and certification statement

Laborers and mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the actual time worked therein, provided, that the employee's payroll records accurately set forth the time spent in each classification in which work is performed.

Whenever the minimum rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either directly pay the benefit as stated in the wage determination classification or pay another bone fide fringe benefit or an hourly cash equivalent thereof. If the contractor does not make payment to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary may require the contractor to set aside, in a separate account, assets for meeting of obligations under the plan or program. Contributions made or cost reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions above as well as regular contributions made or costs incurred for more than a weekly period

(but not less than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

2. Records

Payrolls and basic records shall be maintained by the contractor and each subcontractor for a period covering three years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work. Payrolls will include the name; his or her correct classification; hourly rates paid as wages paid including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b) (2) (B) of the Davis-Bacon Act; daily and weekly number of hours worked; deductions made; and actual wages paid.

Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in Section 1 (b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, **that the plan or program has been communicated in writing to the laborers or mechanics affected**, and records show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

3. Penalties and Withholding

Falsification of a payroll certification may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of Title 18 and section 231 of Title 31 of the United States code. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or delegated agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guaranteed of funds.

The contractor or subcontractor shall make the payroll records required available for inspection, copying, or transcription by authorized representatives of the owner, DEQ, EPA, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. Failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

A breach of these contract clauses or the clauses continued in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

The governing body, shall upon its own actions or upon written request of an authorized representative of the Department of Labor withhold from the contractor under this contract or any other federal contract with the same prime contractor, or any other contract subject to Davis-Bacon prevailing wage

requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics including apprentices, trainees, and helpers employed by the contractor and subcontractor, the full amount of wages required by the contract. In the event of failure to pay any laborer or a mechanics including any apprentice, trainee, or helper, employed or working on the site of the work all or part of the wages required by the contract, the State or the Department of Labor may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guaranteed of funds.

AMERICAN IRON AND STEEL REQUIREMENTS

Use of iron and steel products that are produced in the United States (US) is required for this construction. The prime contractor must provide documentation that all iron and steel products which are permanently incorporated as part of the project meet the specification of American Iron and Steel (AIS) per the definitions contained in section "1" below. Production in the US of the iron or steel products requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives. The prime contractor must certify, section "2" below, that the contractor understands all iron and steel products permanently incorporated as part of the project must satisfy AIS requirements except those waived by EPA (Attachment 908), section "3", or those included as De Minimis components, section "4". The prime contractor must submit to the owner AIS certifications for individual components supplied or installed by the prime contractor as well as components supplied or installed by all subcontractors, section "5". The contractor must include the AIS requirements in any subcontract or purchase agreement made by the prime contractor (Attachment 908) and require subcontractors or suppliers of AIS products to also require their subcontractors or suppliers to include AIS requirements in any subcontracts or purchase agreements they enter into. The owner may refuse payment on any AIS component for which a satisfactory AIS certification has not been submitted.

1. Definition of American Iron and Steel

Iron or steel products mean the following products made primarily (greater than 50% measured by material cost) of iron or steel that are permanently incorporated into the project and are listed below, paragraphs a-d. **Products not listed below do not have to satisfy the AIS requirement.** In addition, iron and steel products used on the construction site temporarily (for example, trench boxes, scaffolding, or equipment used on site which will be removed before completion of the project) are not subject to the AIS requirements.

- a. Lined or unlined pipes or fittings, manhole covers, hydrants, tanks, flanges, pipe clamps and restraints, valves, and reinforced precast concrete. **Rebar and wire in reinforced precast products must be produced in the US and the casting of the concrete product must take place in the US.** Cement and other raw materials used in production of reinforced precast concrete products do not have to be of domestic origin.

- b. Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are: access hatches, ballast screen, benches (iron or steel), bollards (excluding any fill material), cast bases, cast iron hinged hatches (square and rectangular), cast iron riser rings, catch basin inlets, cleanout/monument boxes, construction covers and frames, curb and corner guards, curb openings, detectable warning plates, downspout shoes (boot and inlet), drainage grates, frames and curb inlets, inlets, junction boxes, lampposts, manhole covers (rings and frames), risers, meter boxes, service boxes, steel hinged hatches (square and rectangular), steel riser rings, trash receptacles, tree grates, tree guards, trench grates, and valve boxes (covers and risers).
- c. Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees and zeeks. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.
- d. Construction materials are those articles, materials, or supplies made primarily (greater than 50% materials cost) of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems (discussed below). Some of these items may overlap with what is also considered "structural steel". This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

Mechanical and electrical components, equipment and systems are not considered construction materials and do not have to meet the AIS requirements. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system. The following examples (including appurtenances necessary for their intended use and operation) are NOT considered construction materials and do not have to meet the AIS requirements: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electrical valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

2. Certifications

Within no more than 21 days of determination of the apparent low bidder, the selected contractor must submit to the owner the certification included in Attachment 908. At the conclusion of the project the

contractor must certify with their final payment request that all iron and steel products permanently incorporated into the project satisfy the AIS requirements and no changes or substitutions to the products for which individual certifications were submitted to the owner have been made. This certification statement is included in Attachment 908.

3. EPA Waiver

EPA has sole authority to approve waivers to the AIS provisions. The owner may seek a waiver at any point before, during, or after the bid process if one or a combination of the three conditions below are met. The prime contractor may suggest to the owner waivers not listed in the bid document. The owner has sole discretion to decide whether or not to request a suggested waiver. The waiver request(s) must satisfy one of the following conditions and be approved by EPA:

- a. Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;
- b. Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent; or
- c. Applying the requirements of Section 436 would be inconsistent with the public interest.

The waiver request must include proper and sufficient documentation to support the request. Attachment 908 contains a sample Waiver Request Form. A "Review Checklist for Waiver Review" is also provided to assist the owner in preparation of a waiver request. The information outlined therein must be included with the waiver request letter. Upon approval of the waiver request, EPA will notify the owner directly.

4. De Minimis Materials

The EPA has granted a nationwide waiver of the AIS requirements for de minimis incidental components of eligible infrastructure projects. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the country of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in build, mark them as properly incidental. Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc. Examples of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the total materials incorporated into the project; the cost of an individual item may not exceed 1 percent of the total cost of the total materials incorporated into the project. Contractors who wish to use this waiver should determine the costs of all items installed or supplied for the project. The contractor must retain relevant documentation (i.e., invoices) for each of these items in their project files and must summarize in reports to the owner: the total costs of all materials, the total cost of "incidental" materials, and the calculations by which they determined the percentage of incidental products installed or supplied for the project.

5. Individual Products Certification Documentation

The prime contractor must provide individual certification(s) to the owner for each iron and steel product purchased for incorporation into the project certifying that the product purchased satisfies the AIS requirements. The prime contractor is responsible for gathering all certifications for all products supplied or installed by suppliers and subcontractors, and for submitting these to the owner. As noted above, the contractor must also provide a final certification statement with their final payment request attesting that all American Iron and Steel requirements of this subpart have been met and there have been no changes or substitutions to the products individually certified.

SECTION 907

"General Decision Number: VA20220064 01/07/2022

Superseded General Decision Number: VA20210064

State: Virginia

Construction Types: Heavy (Heavy and Sewer and Water Line)

Counties: Gloucester, Isle of Wight, Mathews, Poquoson*,
Surry and York Counties in Virginia.

*INDEPENDENT CITY

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022, Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022, Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/07/2022

ASBE0085-001 05/01/2015

Rates Fringes

ASBESTOS WORKER/HEAT & FROST
INSULATOR

Includes the application
of all insulating
materials, protective
coverings, coatings and
finishes to all types of
mechanical systems.....

\$ 20.72 12.20

* ELEC1340-007 12/01/2020

Rates Fringes

ELECTRICIAN.....\$ 29.00 2.5%+14.59

SUVA2010-065 09/07/2010

Rates Fringes

CARPENTER.....\$ 21.57 3.74

CEMENT MASON/CONCRETE FINISHER...\$ 19.00 3.83

IRONWORKER, REINFORCING.....\$ 22.45 11.85

IRONWORKER, STRUCTURAL.....\$ 20.55 8.25

LABORERS

Common or General.....\$ 10.20 2.17
Flagger.....\$ 7.39 0.20
Landscape.....\$ 10.00
Pipelayer.....\$ 13.88 1.32

POWER EQUIPMENT OPERATOR:

Backhoe.....\$ 17.61 2.57
Bobcat/Skid Loader.....\$ 11.40
Bulldozer.....\$ 20.63 7.28
Crane (Tower).....\$ 23.29 6.02
Crane.....\$ 23.15
Excavator.....\$ 19.27 7.28
Loader.....\$ 18.27 3.46
Mechanic.....\$ 26.78 6.32
Trackhoe.....\$ 12.75 1.24
Tugboat.....\$ 19.00

TRUCK DRIVER, Includes All

Dump Trucks.....\$ 13.42 2.39

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union, which prevailed in the survey for this classification, which in this example would be Plumbers 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Division National Office Branch of Wage Surveys. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

SECTION 908

(For Contractor's Optional Use; See Instructions at www.dol.gov/esa/whd/forms/wh347instr.htm)

U.S. Department of Labor
Employment Standards Administration Wage and Hour Division

PAYROLL

PAYROLL NO. LOCATION FOR WEEK ENDING CONTRACT NO.

NAME OF CONTRACTOR OR SUBCONTRACTOR ADDRESS PROJECT

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT OR ST.	(4) DAY AND DATE							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS						(9) NET WAGES PAID FOR WEEK	
				HOURS WORKED EACH DAY																	
			O																		
			S																		
			O																		
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, ESA, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)
_____ ; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that
no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either
directly or indirectly from the full wages earned by any person, other than permissible
deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the
Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108,
72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
applicable wage rates contained in any wage determination incorporated into the contract; that the
classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship
program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and
Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered
with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the
above referenced payroll, payments of fringe benefits as listed in the contract have
been or will be made to appropriate programs for the benefit of such employees,
except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has
been paid, as indicated on the payroll, an amount not less than the
basic hourly wage rate plus the amount of the required fringe
benefits as listed in the contract, except as noted in section 4(c)
below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE

SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR
SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE
31 OF THE UNITED STATES CODE.

AMERICAN IRON AND STEEL (AIS) CERTIFICATION STATEMENT

Upon execution of this certification, the selected Contractor acknowledges to and for the benefit of the Town of Smithfield (Owner) and the State of Virginia that it understands the goods and services under this Agreement are being funded with monies made available by the American Rescue Plan Act and that statutory requirements require that all of the iron and steel products used in the project must be produced in the United States in accordance with "American Iron and Steel Requirements" of these inserts. The Contractor hereby represents and warrants to and for the benefit of the Owner and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved or the product is incidental as described in the De Minimis section, (c) the Contractor will provide verified information, product certifications, or assurance of compliance with this paragraph as requested by the Owner, and (d) information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or State to recover damages from the Contractor for any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Owner).

This statement relates to a proposed contract between _____ and _____
(owner) (contractor)

in conjunction with _____ to be funded with monies made available by the American Rescue Plan Act.
(project name)

Signature

Date

Name and Title of Signer (Please type or print)

AMERICAN IRON AND STEEL (AIS) WAIVER REQUEST

A waiver from the American Iron and Steel (AIS) requirements of the Consolidated Appropriations Act of 2014 (CAA) is requested for the following reason(s):

- _____(1) Applying the American Iron and Steel (AIS) requirements of the CAA would be inconsistent with the public interest;
- _____(2) Iron, steel, and relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- _____(3) Inclusion of iron and steel products produced on the United States will increase cost of the overall project by more than 25%.

Relevant documentation to this request is enclosed. No materials will be installed prior to approval of this waiver request by EPA.

_____Additional sheets attached

This waiver request relates to a proposed contract between _____ and _____
(contractor) (owner)

in conjunction with _____ to be funded with monies made available by the American Rescue Plan Act.
(project name)

Signature

Date

Name and Title of Signer (Please type or print)

Review Checklist for Waiver Request

Review Items	Yes	Comments
<ul style="list-style-type: none"> Waiver request includes the following information: <ul style="list-style-type: none"> Description of the foreign and domestic construction materials Unit of measure Quantity Price Time of delivery or availability Location of the construction project Name and address of the proposed supplier A detailed justification for the use of foreign construction materials Waiver request was submitted according to the State's instructions to SRF assistance recipients Assistance recipient (owner) made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor 		
<p>Cost Waiver Requests</p> <ul style="list-style-type: none"> Waiver request includes the following information: <ul style="list-style-type: none"> Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products (Price Comparison Worksheet - Page 2). Relevant excerpts from the bid documents used by the prime contractor to complete the Price Comparison Worksheet Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers 		
<p>Availability Waiver Requests</p> <ul style="list-style-type: none"> Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: <ul style="list-style-type: none"> Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials Documentation of the assistance recipient's (owner's) efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. Project schedule Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials Waiver request includes a statement from the prime contractor confirming the non-availability of the domestic construction materials for which the waiver is sought Has the State received other waiver requests for the materials described in this waiver request, for comparable projects? 		

American Iron and Steel (AIS) Price Comparison Worksheet

Instructions: To be completed by the prime contractor. In column (a), enter all iron and steel products required to build the project as designed. In column (b) enter the cost estimate for each component as supplied by domestic sources. In column (c) enter the cost estimate for each component for which waivers are requested, as supplied by foreign sources.

(a) Iron and Steel Product	Unit of Measure	Quantity	(b) Price – Domestic Material*	(c) Price – Foreign Material*
			(d) Total Domestic Project Cost:	(e) Total Foreign Project Cost:

*Include all delivery costs to the construction site

AMERICAN IRON AND STEEL (AIS) FINAL CERTIFICATION STATEMENT

Upon execution of this certification the Contractor hereby certifies that all of the iron and steel products used in this project were produced in the United States except those for which an appropriate waiver(s) has been approved by the U.S. Environmental Protection Agency, and that no changes or substitutions to the individual certifications provided by the contractor have been made.

This statement relates to a proposed contract between _____ and _____
(owner) (contractor)

in conjunction with _____ funded with monies made available by the American Rescue
(project name)

Plan Act.

Signature

Date

Name and Title of Signer (Please type or print)

APPENDIX A

**ELEVATED WATER
STORAGE TANK INSPECTION**

**WILSON ROAD
ELEVATED WATER STORAGE TANK
150,000-GALLONS CAPACITY**



**QCS PROJECT NO.
SMTHFLD-001-KH-014-001**

Prepared For

KIMLEY-HORN AND ASSOCIATES, INC.

11815 Fountain Way, Suite 300,
Newport News, Virginia 23606

By

QUINN CONSULTING SERVICES, INC.

10500 Wakeman Drive, Suite #100
Fredericksburg, VA 22407
(540) 850-0435
(540) 898-8248 {fax}

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Appendix A:	Tank Data
Appendix B:	Photographs
Appendix C:	Inspection and Evaluation Methods

1.0 GENERAL INFORMATION

1.1 On Tuesday May 22, 2018, Quinn Consulting Services' representatives Roger Triana, Austin Goodwin, and William Pybus visited the Wilson Road Elevated Potable Water Storage Tank and performed a coating inspection/evaluation of the interior wet and exterior dry surfaces.

1.1.1 "Dry tank" coating inspection/evaluation of the exterior dry areas was performed using the following methods.

- The visual inspection/evaluation of the exterior surfaces was performed from ground level, tower ladder, balcony, shell/roof ladder, and the tank roof
- Note: June 15, 2018, DJI Phantom 4 UAV (unmanned aerial vehicle) was used to perform visual inspections and subsequent video recordings of the existing conditions.

1.1.2 "Dry tank" coating inspection/evaluation of the interior wet surfaces was performed from the following vantage points;

- the reservoir ladder and tank bowl
- the tank's wet riser at grade level through the shell style manway & the wet riser opening in the tank bottom.

1.1.3 Hi-pressure water washout/cleanout of the Interior Wet surfaces was performed using potable water supplied by the Tank Owner.

1.1.4 Disinfection of the Interior Wet surfaces was performed in accordance with Method #2 of AWWA C652, using a 200 ppm chlorinated water solution.

1.2 QCS performed the field inspection/evaluation of the tank in conformance with the applicable sections of AWWA M42, "Steel Water-Storage Tanks".

2.0 SUMMARY

2.1 Coating Systems

2.1.1 Interior Wet Coating System

a. Heavy Metals Content Analysis

1. The content of the interior wet coating system was not analyzed for heavy metals. No current records of paint chip test analysis results from previous tank evaluations were available for review.

2. The applied epoxy coating system's history indicates that the coating film has a high probability of complying with the latest Federal Regulations for lead free content (less than 0.06 percent by weight).
3. Repair specifications must include provisions to prevent fugitive dust emissions in accordance with applicable local, state and Federal Regulations.

b. Coating Condition Status

1. The Tank was originally built in 1967. Comparison of the existing conditions versus the QCS 2010 Tank Evaluation Report shows that the interior wet coating system has received coating touchup repairs for structural modifications and repairs performed after the 2010 Tank Evaluation. See the photographs in Appendix B.
2. Most of the interior wet coating system appears to be in fair condition except for the following areas:
 - Sporadic rust spots on or near the structural repaired roof areas, the new ladders (reservoir & wet riser), the roof/shell plates, erection ring, tank bottom plates, and wet riser.
 - Sporadic patches of coating film blisters were observed on the reservoir ladder. A few coating film blisters were observed on the tank bottom plates.
 - Pit depths in the lower cone and tank bottom plates were found to be 1/32" or less.
3. The interior wet coating film is reaching the end of its service life. The tank interior coating system should be removed and replaced within the next two (2) to four (4) years. See Section 3.1 for more details.

2.1.2 Exterior Dry Coating System

a. Heavy Metal Content Analysis

1. The lead content (% by weight) of the exterior dry coating system film was not analyzed.
2. The analysis results of the Caldwell Tanks test samples dated 4/22/2010 indicates a 2.4 percent by weight lead content and a 0.10 percent by weight chromium content.

3. Per the current State and Federal Regulations, the exterior dry coating system film **is** classified as a **lead based** paint.
4. Repair/Removal specifications must include provisions for full containment, lead paint removal and abatement or well as prevention of hazardous waste generation and/or emissions in accordance with applicable local, state and Federal Regulations.

b. Coating Condition Status

1. The Tank was originally built in 1967. Comparison of the existing conditions versus the QCS 2010 Tank Evaluation Report shows that the exterior dry coating system has received an “overcoat” coating application in addition to structural modifications and repairs performed after the 2010 Tank Evaluation. See the photographs in Appendix B.
2. The exterior dry coating film appears to be at the end of its service life. Severe film cracking, checking, and delamination are readily visible on all accessible areas. Rust bleed and rust areas are easily visible from the tank roof down to the base pads.
3. QCS recommends replacement of the tank’s exterior coating system within the next two (2) years. This replacement operation should be scheduled at the same time as the replacements of the Interior Wet and Valve/Piping Vault coating systems. See Section 3.2 for more details.

2.1.3 Exterior Dry – Valve/Piping Pit Coating Systems

a. Heavy Metal Content Analysis

1. The content of the exterior dry – piping /valve coating systems was not analyzed for heavy metals.
2. Repair/Removal specifications must include provisions for full containment, lead paint removal and abatement or well as prevention of hazardous waste generation and/or emissions in accordance with applicable local, state and Federal Regulations.

b. Coating Condition Status

1. The Tank was originally built in 1967. Comparison of the existing conditions versus the QCS 2010 Tank Evaluation Report shows that the exterior dry-valve/piping coating systems have not received coating touchup repairs since the 2010 QCS Tank Evaluation. See the photographs in Appendix B.
2. The valve/piping coating systems are mostly non-existent at this time.
3. The exterior dry - valve/piping coating systems should be removed and replaced within the next two (2) years. See Section 3.3 for more details.

2.2 Structural

2.2.1 Based on the inspection data, it appears the tank's ladders (interior wet and exterior dry) as well as the exterior balcony handrail has been replaced since the QCS 2010 Tank Evaluation Report.

- a. The balcony handrail's space clearance gap (21") between the bottom edge of the toprail and the top edge of the midrail is not compliant with current OSHA Regulations (29CFR1910.21 (maximum 19"). See OSHA 29 CFR 1910.29 (b)(2)(iv).

2.2.2 New safety climb cable systems have been installed on the new ladders to comply with current OSHA Regulations.

2.2.3 The roof/shell ladder's foot clearance (rung to steel plate) gap ranged 5" to 6" along the upper shell and roof knuckle (seven rungs – 6'-0") is not compliant with current OSHA Regulations (minimum 7").

2.2.4 A new circular handrail has been installed on the Exterior Roof.

- a. The circular roof handrail's toprail height of 48.5" and the midrail height of 26") are not compliant with current OSHA Regulations. See OSHA 29 CFR 1910.29 (b)(1) & 29 CFR 1910.29 (b)(2)(i).
- b. The circular roof handrail's space clearance (20") between the bottom edge of the toprail and the top edge of the midrail is not compliant with current OSHA Regulations (maximum 19"). See OSHA 29 CFR 1910.29 (b)(2)(iv).

- c. The circular roof handrail's space clearance (20") between the bottom edge of the midrail and the top edge of the toe-plate is not compliant with current OSHA Regulations (maximum 19"). See OSHA 29 CFR 1910.29 (b)(2)(iv).

2.2.5 A new center roof vent (vacuum frost proof screens) has been installed.

2.2.6 The antenna cables run from the tower support column through the balcony step-through opening as well as the placement of the balcony's antenna/supports creates a walkway tripping hazard. This does not comply with current OSHA Regulations.

2.2.7 The antenna cable attached to the siderail of the shell/roof ladder and roof handrail's components (midrail and toprail) is not compliant with OSHA Regulations.

2.2.8 The Aviation Light fixtures are attached to the toprail of the balcony's handrail. This does not comply with current OSHA Regulations.

2.3 Cathodic Protection System

2.3.1 This water storage tank currently does not have an installed Cathodic Protection System (CPS).

2.3.2 The cost of a new Cathodic Protection system is not included in the tank repair cost estimate.

2.4 Remaining Coating Service Life

If recommended structural modifications and coating systems' replacements are made to the tank (interior wet & exterior) within the next two (2) years as listed in Section 3.0 and inspected regularly thereafter, the new interior wet and exterior dry coating systems should provide the expected 15 to 20 years of service life.

2.5 Repair and Reconditioning Cost Estimates

This estimate is based on current pricing. In order to obtain competitive bids, the project should be bid four (4) to six (6) months prior to the scheduled start date.

The cost of replacing the coating systems of the valve/piping vault, interior wet and the exterior dry surfaces as well as the structural modifications is estimated at **\$311,500.00**.

Please see Section 3.0 for a more detailed summary of this cost breakdown.

3.0 RECOMMENDATIONS

3.1 Interior Wet – Coating System

- 3.1.1 The coating system is approaching the end of its service life and exhibits varying degrees of corrosion and coating failures.
- 3.1.2 The tank interior wet coating system should be removed and replaced within the next two (2) to four (4) years with an NSF Standard 61 approved coating system.

3.2 Exterior Dry - Coating System

- 3.2.1 The coating system has reached the end of its service life, is a **lead based** paint, and is not a good candidate for further overcoating applications.
- 3.2.2 The exterior coating system should be replaced within the next two (2) years.
- 3.2.3 Reconditioning specifications must be designed to comply with current environmental regulations for **lead based** paint removal and abatement, full containment and its structural impact on the tank structure, and provisions to eliminate generating hazardous waste as well as proper disposal of waste generated during the rehabilitation.
- 3.2.4 The Containment Plans must address the protection of the Cellular/Antenna Building next to the Support Columns.

3.3 Exterior Dry – Valve/Piping Vault Coating System

- 3.3.1 The valve/piping coating systems are mostly non-existent at this time and should be treated as a **lead based** paint abatement. It is not a good candidate for overcoating applications.
- 3.3.2 The valve/piping vault coating system should be replaced within the next two (2) years with an NSF Standard 61 approved coating system.

3.4 Structural – Interior Wet

- 3.4.1 Pit weld repair of pitted areas with depths greater than 10% of the plate thickness in the tank bowl plates and riser surfaces below the High Water Level (HWL).

Repair the tank surface by welding and grinding. This work will require approximately ten (10) man-hours of welding and grinding.

- 3.4.2 Install two (2) horizontal slot openings (1" by 4") in the wet riser mud ring extension at the tank bowl opening. Locations to be selected by the Engineer.
- 3.4.3 Install isolation gasket materials at the Cable Safety Climb attachment points with the carbon steel ladder rungs (reservoir and wet riser) to prevent direct contact and minimize corrosion. Replace any severely corroded attachment nuts/bolts.
- 3.4.3 Replace the gasket for the round, shell pressure style manway located in the lowest can section of the wet riser.

3.5 Structural - Exterior

- 3.5.1 Modify the existing shell/roof standoffs to increase ladder's foot clearance along the upper shell and roof knuckle to be compliant with current OSHA Regulations (minimum 7").
- 3.5.2 Reroute the roof handrail antenna cable to the underside of the balcony platform and up through new penetration opening and up the shell and roof to the existing antenna by attachment to new support brackets.
- 3.5.3 Install a flat-bar rail on the existing balcony handrail midway between the toprail and current midrail to meet current OSHA spacing requirements.
- 3.5.4 Install a flat-bar rail on the existing circular roof handrail midway between the toprail and current midrail by seal welding the flat-bar to the existing handrail posts to meet current OSHA spacing requirements.
- 3.5.5 Install a flat-bar rail on the existing circular roof handrail midway between the current midrail and top edge of the toe-plate by seal welding the flat-bar to the existing handrail posts to meet current OSHA spacing requirements.
- 3.5.6 Relocate the two (2) antenna assemblies currently attached to either side of the balcony step-through opening from the inside face of the balcony handrail to a new support brackets on the outside of the handrail that do not intrude into the walkway space and relocates the antenna cables from crossing the ladder/balcony step-through opening.
- 3.5.7 Re-route all antenna cables to separate support brackets as to not be connected to any ladders and off the floor platform to avoid a tripping hazard as required by OSHA regulations.

The Tank Owner should have the antenna cables routed on the underside of the balcony platform.

- 3.5.8 Install new attachment brackets to the balcony handrail posts and relocate the Aviation Obstruction Lights System fixtures from the toprail in accordance with OSHA Regulations. Electrical power cable should be routed to support brackets on the underside of the balcony platform.
- 3.5.9 Any cracked, loose or missing grout under the base plates of all the support columns and of the wet riser as well as concrete foundation defects should be removed back to sound concrete and repaired with non-shrink 3000 PSI grout.
- 3.5.10 Epoxy caulk the gap area of the support column anchor bolts/ nuts.

3.6 Site

- 3.6.1 Prior to rehabilitation, the Tank Owner should contact the respective antenna companies utilizing antenna space to have the respective owner temporarily remove their respective antenna, the cables and the ground equipment boxes. Cost estimates are not included for this item.
- 3.6.2 The electrical power supplier should also be contacted to either move the adjacent power lines or provide insulating protective layers to prevent safety issues while using the required containment tarp system. Cost estimates are not included for this item.
- 3.6.3 The area around the tank should be re-graded to prevent standing water around the support columns and wet riser foundation. The top of the foundations should be at least 4 to 6 inches above grade. Cost estimates are not included for this item.

4.0 COST ESTIMATES

Based on current repair costs, the following actions are estimated as follows:

4.1	Interior Wet - Coating Replacement	
	Type of Coating – Zinc/Epoxy System	\$ 72,000.00
4.2	Exterior Dry - Coating Replacement	
	Type of Coating – Epoxy/Polyurethane	\$ 210,000.00
4.3	Exterior Dry – Valve/Piping Vault Coating System	
	Type of Coating – Zinc/Epoxy System	\$ 6,500.00
4.4	Interior Wet - Structural Modifications	\$ 3,000.00
4.5	Exterior Dry - Structural Modifications (Notes #1 & #2)	\$ 20,000.00
4.6	Site	<u>Tank Owner</u>
Estimated Total Rehabilitation Cost		\$ 311,500.00

*Please note: The pricing provided above represents budget estimates of the various phases of recommended work and should not be construed as binding or committal upon QCS's behalf.

Note #1: Containment costs are included due to restrictions on hazardous waste / fugitive dust emissions and the presence of a residential/business neighborhood.

Note #2: Cost for structural evaluation of the Roof/Shell ability to support a containment system is not included.

Note #3: Antenna cable modifications and work activities are not included in this cost estimate.

Note #4: Cathodic Protection installations and landscaping are not included in this cost estimate.

Written by:

William E. Pybus

William E. Pybus
QCS Coatings Inspector

NACE Certified Coatings Inspector No. 402

Date June 18, 2018

TANK DATA

QCS Project No.: SMTHFLD-001-KH-014-001 **QCS Proposal No.:** 6223-403

Customer: Kimley-Horn & Associates **Phone:** (757) 320-5637

Street/City/State/Zip: 11815 Fountain Way, Suite 300, Newport News, Virginia 23606

Customer Contact: Jamie Weist, P.E.

Tank Owner: Town of Smithfield, Virginia **Phone:** 757-365-4200

Tank Owner Contact: Tim Perkins

Purpose of Visit:

- 1) Tank examination, interior & exterior coating evaluation
- 2) Washout/Cleanout and Disinfection Operations

Inspected By: William E. Pybus, NACE Certified Coating Inspector #402

Austin Goodwin, QCS Inspector

Roger Triana, NACE Certified Coating Inspector #6219

Type of Inspection: Standard Existing Steel Water Storage Tank Inspection

Date of Visit: May 22, 2018

Reviewed By: William Pybus, NACE Certified Coating Inspector #402

Roger Triana, NACE Certified Coating Inspector #6219

Austin Goodwin, QCS Inspector

Structure Contractor: (Fabricator) Taylor Iron Works

(Field Erector) Whitmire Tank Company

Construction Date: 1967 **Contract ID:** None Available

Type of Construction: Welded Yes Riveted No

Capacity: 150,000 Gallons **Tank Diameter:** 32' – 0"

Number and Type Support Columns: Four (4) / Outside Diameter: 26"

Height: Overall ~132' – 0" Balcony 107' – 1"

Height to: HWL 127' – 9" LWL ~100' – 0"

Type of Access to Tank Interior:

- 1) Tower Access Ladder to Balcony
- 2) Shell/Roof Ladder to Roof Access Manway
- 3) Interior Wet: Reservoir Ladder & Wet Riser Ladder
- 4) Wet Riser Shell Style Manway at Grade to Wet Riser Ladder

Tank Construction Drawings: Layout Drawing

Previous Inspection Records: 2010 QCS Tank Evaluation Report

TANK DATA

EXTERIOR DRY - COATING SYSTEM

1) Coating Application (Year):

- Original System - ~1967. Subsequent Applications - Unknown

2) Coating Contractor:

- Original System – Whitmire Tank Co.
- Subsequent Applications– Utility Services & Caldwell Tanks

3) Original Coating Manufacturer (Unknown):

- Primer – Red Lead.
- Finish coat – Alkyd Enamel

4) Overcoat Coating Manufacturer (Unknown):

- Barrier Coating – Epoxy.
- Finish coat – Unknown

INTERIOR WET - COATING SYSTEM

1) Coating Application (Year):

- Original System - ~1967. Subsequent Applications - Unknown

2) Coating Contractor:

- Original System – Whitmire Tank Co.
- Subsequent Applications– Utility Services & Caldwell Tanks

3) Original Coating Manufacturer (Unknown):

- Primer – Unknown
- Finish coat – Epoxy

4) Current Coating Manufacturer (Unknown):

- Primer – Unknown
- Finish coat – Epoxy



Photo #: 1

Description: Exterior: Grade Level view of the Wilson Road Elevated Water Storage Tank.



Photo #: 2

Description: Aerial View of Wilson Road EWT Site.



Photo #: 3

Description: Exterior: Roof Access Manway. Roof coating film has been overcoated but exhibits film delamination, cracking, corrosion areas, and moderate to severe chalking.



Photo #: 4

Description: Exterior: View of the Interior Wet's Roof Access Manway. Spot rust occurring on the curb and reservoir ladder.



Photo #: 5

Description: Interior Wet: View of the rusting Safety Climb Cable and Reservoir Ladder.



Photo #: 6

Description: Interior Wet: View of the Roof, Appurtenances, & Reservoir Ladder. Previous coating touchup repairs observed.



Photo #: 7

Description: Interior Wet: View of the Roof, Appurtenances, Shell, & Reservoir Ladder.



Photo #: 8

Description: Interior Wet: View of the Roof & Overflow Weir. Spot corrosion areas observed on the roof plate butt-welds.



Photo #: 9
Description: Interior Wet: View of the Roof & Center Vent.

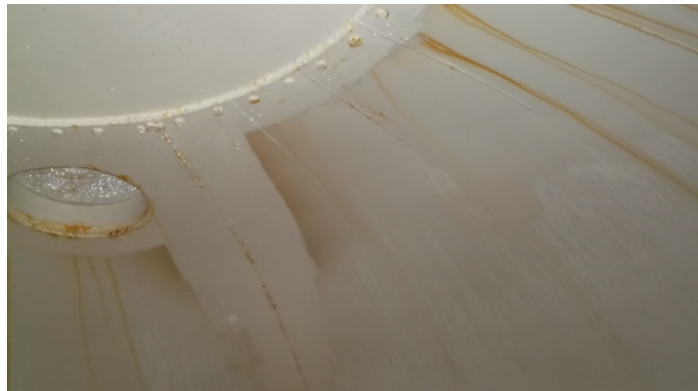


Photo #: 10
Description: Interior Wet: View of the Roof & Flanged Ventilation Manway.



Photo #: 11
Description: Interior Wet: View of the Roof. Some small rust areas along butt-welds and on plates.



Photo #: 12
Description: Interior Wet: View of the Roof, Shell, & Reservoir Ladder. Horizontal Erection Ring appears to be stitch welded and has numerous areas of rust and rust bleed.



Photo #: 13

Description: Interior Wet-Shell: Horizontal Erection Ring appears to be stitch welded and has numerous areas of rust and rust bleed.



Photo #: 14

Description: Interior Wet: Coating film blisters on Reservoir Ladder.



Photo #: 15

Description: Interior Wet: Coating film blisters on Reservoir Ladder.



Photo #: 16

Description: Interior Wet: Coating film blisters and rust areas along the Reservoir Ladder.

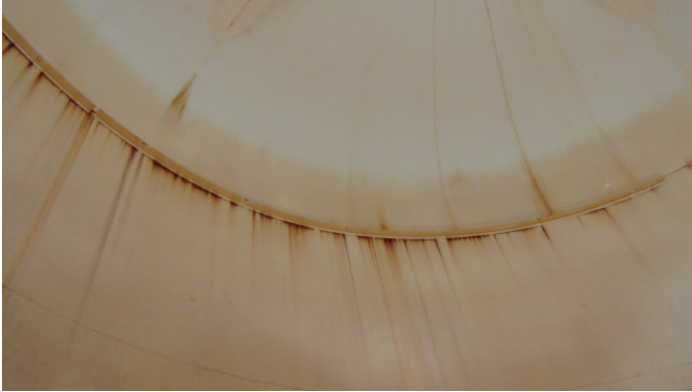


Photo #: 17

Description: Interior Wet - Shell: Horizontal Erection Ring appears to be stitch welded and has numerous areas of rust and rust bleed.



Photo #: 18

Description: Interior Wet: Lower Shell & upper tank bowl plates exhibit numerous spot rust points.



Photo #: 19

Description: Interior Wet: Pre-cleaning view of Wet riser opening in tank bottom/bowl plates. Wet riser hinged grate cover attached to extended mud ring functional.



Photo #: 20

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film.



Photo #: 21

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film.



Photo #: 22

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film.



Photo #: 23

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film. Coating touchup areas exhibit roller nap and debris in the film.



Photo #: 24

Description: Interior Wet: Closeup view - Tank Bowl plates have sporadic rust spots in the coating film.



Photo #: 25

Description: Interior Wet: Closeup view - Tank Bowl plates have sporadic rust spots in the coating film.



Photo #: 26

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film.

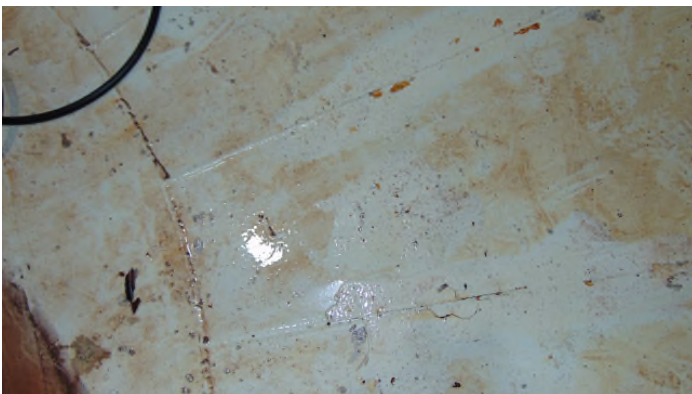


Photo #: 27

Description: Interior Wet: Tank Bowl plates have sporadic rust spots and a few cracking spots in the coating film. Coating touchup areas exhibit roller nap and debris in the film.



Photo #: 28

Description: Interior Wet: Tank Bowl plates have sporadic rust spots in the coating film. Coating touchup areas exhibit roller nap and debris in the film.

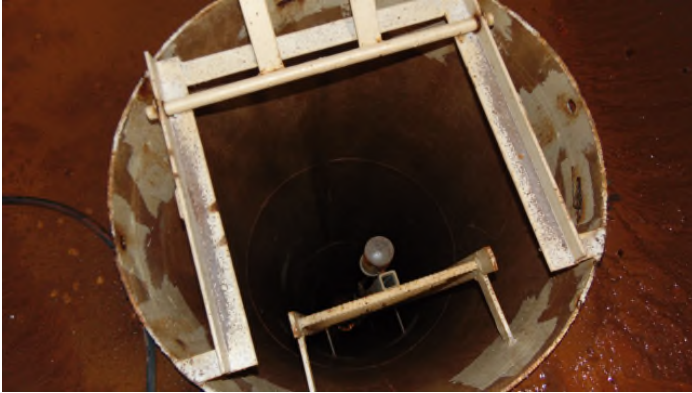


Photo #: 29

Description: Interior Wet: Down view of Wet Riser from tank bottom opening,



Photo #: 30

Description: Interior Wet: Down view of Wet Riser from tank bottom opening,



Photo #: 31

Description: Interior Wet Riser: View from grade level via lower shell manway. Rust spots in the coating film at coating touchup areas and ladder components.



Photo #: 32

Description: Interior Wet Riser: View from grade level via lower shell manway. Rust spots in the coating film at coating touchup areas and ladder components.



Photo #: 33

Description: Interior Wet Riser: View from grade level via lower shell style manway. Rust spots in the coating film at coating touchup areas and ladder components.

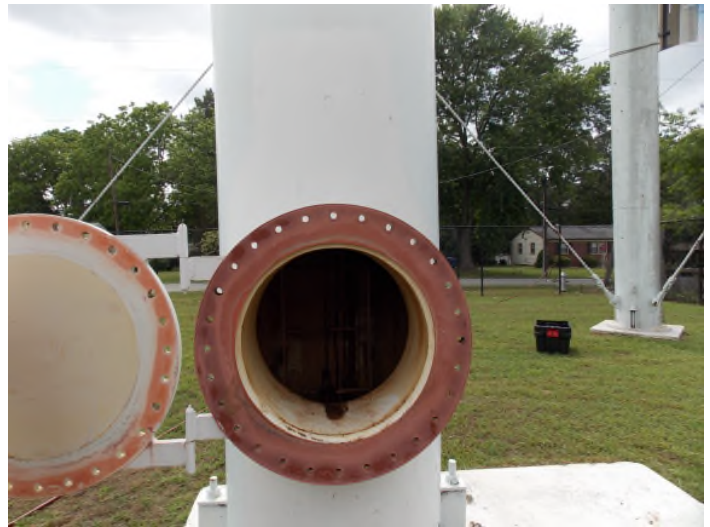


Photo #: 34

Description: Exterior: View of Wet Riser- Shell Style Manway.



Photo #: 35

Description: Exterior - Aerial View: Roof plates exhibit moderate to severe chalking, spot rust areas and film cracking. Antenna cable run attached to inside of circular Roof Handail.



Photo #: 36

Description: Exterior: Center Roof Vent Assembly.



Photo #: 37

Description: Exterior: Flanged Ventilation Manway. Spot rust areas and cracking coating film on the roof plates.



Photo #: 38

Description: Exterior: Spot rust areas and cracking coating film on the roof plates.



Photo #: 39

Description: Exterior: Ladder view of Circular Roof Handrail. Antenna cable attached to ladder siderail and routed to the inside of the circular handrail.



Photo #: 40

Description: Exterior: View of Circular Roof Handrail and Ladder. Antenna cable attached to ladder siderail and routed to the inside of the circular handrail.



Photo #: 41

Description: Exterior: Antenna cable attached to ladder siderail and routed to the inside of the circular handrail.



Photo #: 42

Description: Exterior-Aerial View: Roof plates exhibit moderate to severe chalking, spot rust areas and film cracking. Antenna cable run attached to inside of circular Roof Handrail.



Photo #: 43

Description: Exterior - Aerial View: Roof plates exhibit moderate to severe chalking, spot rust areas and film cracking. Antenna cable run attached to inside of circular Roof Handrail.



Photo #: 44

Description: Exterior - Aerial View: Roof, shell, and balcony surfaces exhibit moderate to severe chalking, spot rust areas, and film cracking. Antenna cable runs are inappropriately routed through Balcony/Ladder Step-Through opening.



Photo #: 45

Description: Exterior - Aerial View: Roof, shell, and balcony surfaces exhibit moderate to severe chalking, spot rust areas, and film cracking. Antenna cable runs are inappropriately routed through Balcony/Ladder Step-Through opening.



Photo #: 46

Description: Exterior - Aerial View: Roof, shell, and balcony surfaces exhibit moderate to severe chalking, spot rust areas, and film cracking. Antenna cable runs are inappropriately routed through Balcony/Ladder Step-Through opening.



Photo #: 47

Description: Exterior: Roof surfaces exhibit moderate to severe chalking, spot rust areas, and film cracking.



Photo #: 48

Description: Exterior - Aerial View: Shell and balcony surfaces exhibit moderate to severe chalking, spot rust areas, and film cracking.



Photo #: 49

Description: Exterior: Antenna cable runs are inappropriately routed through Balcony/Ladder Step-Through opening.



Photo #: 50

Description: Exterior: Aviation Obstruction Lights inappropriately attached to top rail of the balcony handrail.



Photo #: 51

Description: Exterior: Corrosion and coating film failure on Shell, Balcony, and Support Columns



Photo #: 52

Description: Exterior: Corrosion and coating film failure on Shell, Balcony, and Support Columns



Photo #: 53

Description: Exterior: Tank Bowl plates have film failures from interior wet weld repairs.



Photo #: 54

Description: Exterior: Support columns exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 55

Description: Exterior: Close-up View. Support columns exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 56

Description: Exterior: Close-up View. Support columns exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 57

Description: Exterior: Close-up View. Support columns and Wet Riser exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 58

Description: Exterior: Close-up View. Support columns exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 59

Description: Exterior: Close-up View. Support columns and Wet Riser exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 60

Description: Exterior: Close-up View. Support columns and Wet Riser exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 61

Description: Exterior: Close-up View. Support columns and Wet Riser exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).

Photo #: 62

Description: Exterior: Close-up View. Support columns, cross-rods, and Struts exhibit coating film failures (checking, cracking, delamination, rust spots, etc.).



Photo #: 63

Description: Exterior: Grade Level View of Support Column with Tower Access Ladder. Ladder Gate with Padlock.



Photo #: 64

Description: Exterior: Grade Level View of Concrete Foundations for the Support Columns and Wet Riser. Cellular Bldg onsite.



Photo #: 65

Description: Exterior: Grade Level View of Concrete Foundations for the Support Columns and Wet Riser. Cellular Bldg onsite.



Photo #: 66

Description: Exterior: View of Overflow Pipe Outlet with TideFlex and Splash Pad.



Photo #: 67

Description: Exterior: Tops of the Support Column Foundation are not high enough (4" to 6") above the surrounding Grade.



Photo #: 68

Description: Exterior: View of Wet Riser and Valve/Piping Concrete Vault.



Photo #: 69

Description: Tank Identification Plate attached on Wet Riser above Shell Style Manway.



Photo #: 70

Description: Exterior: View of Wet Riser and Valve/Piping Concrete Vault.



Photo #: 71

Description: Exterior: View of Wet Riser Valve/Piping Concrete Vault. Vault floor has significant mud and standing water.



Photo #: 72

Description: Exterior: View of Wet Riser Valve/Piping Concrete Vault. Vault floor has significant mud and standing water.



Photo #: 73

Description: Exterior: View of Wet Riser Valve/Piping Concrete Vault.
Vault rebar ladder is rusting.

INSPECTION AND EVALUATION METHODS

I. Scope

- 1.0 The tank was evaluated on the interior and exterior in conformance with the following:
 - a. QCS Proposal No. 6223-403
 - b. General guide lines of AWWA Standard M42, "Steel Water Tank."
- 2.0 The inspection of the base metal and of the coating on all interior and exterior surfaces was limited to areas accessible without scaffolding or special rigging. In addition, where possible, the base metal and the coating on the interior wet surfaces were examined from the interior wet ladder and tank bottom after the tank was drained and cleaned.
- 3.0 No structural analysis was performed to determine if the tank design complies with the AWWA D-100 Standard for "Welded Steel Tanks for Water Storage." However, any observed non-conformance to the AWWA D-100 standard is noted in this report.
- 4.0 Although compliance with OSHA Regulations was not a part of this inspection, any unsafe conditions or violations of current OSHA Regulations, which were observed, are noted in this report.

II. Evaluation Techniques

1.0 Site

The tank site was visually examined for proper drainage away from the tank and for conditions affecting access and exterior reconditioning.

2.0 Foundations

The concrete tank foundation was visually examined for cracks, spalling, condition of grout and Flexcell, indications of distress/settlement, and elevation above grade.

3.0 Coating Thickness

Interior and exterior coatings, where accessible were tested in accordance with Steel Structures Painting Council SSPC-PA2-97 "Measurement of Dry Film Thickness with Magnetic Gages," using PosiTector-6000 Type 2, fixed probe, magnet flux gages.

INSPECTION AND EVALUATION METHODS

4.0 Coating Adhesion

Adhesion testing of the coating to the steel was performed by ASTM D3359: Shear Adhesion Test, Measuring Adhesion by Tape Test. In addition, a subjective coating adhesion evaluation was performed using a pen knife.

5.0 Coating Serviceability

The estimated remaining coating life or serviceability evaluation was performed using a wide variety of inspection instruments such as dry film thickness gauge, pen knife, Tooke gauge, adhesion tester(s), and 30x microscope.

The instrument inspection was combined with a thorough, total, close visual inspection of all accessible areas of the interior coating for holidays (misses), skips, runs, sags, surface contaminants, overspray, dry spray, poor coating cohesion, inter-coat delamination, loss of adhesion to the substrate, condition of the steel underneath the coating, and any other objectionable defects.